

New Compass of the World



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NEW COMPASS OF THE WORLD

A Symposium on Political Geography

EDITORS

HANS W. WEIGERT

VILHJALMUR STEFANSSON

RICHARD EDES HARRISON



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———— IN MEMORY OF L. W. ————

A nation may be said to consist of its territory, its people, and its laws. The territory is the only part which is of certain durability. "One generation passeth away, and another generation cometh, but the earth abideth forever." It is of the first importance to duly consider and estimate this ever enduring part.

ABRAHAM LINCOLN
Message to Congress, Dec 1, 1862

If a political system is ever to be devised which can offer real promise of salting the roots of war, the men who design it and those who implement it will need an intimate and full understanding of geography in its relation to human affairs.

Geographical Foundations of National Power, I,
(Army Service Forces Manual M103-1), Washington, 1944

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INTRODUCTION

History: Geography Set in Motion

A British geographer and statesman once coined the phrase, "The cost of geographical ignorance is immeasurable." Of late this statement has become a truism. For geography has guided the strategy of the war. At the risk of slightly overstating our case, it can be said that Victory was won because our side committed fewer geographical blunders than the enemy. We have still to learn the vital lesson that the strategy of the peace must also be based on geography. Is it not the noble obligation of the geographer to make us understand the natural regions and their inhabitants, and on this basis to develop new insight into the world as a whole? The new world view, without which the battle of the peace cannot be won, will remain hazardous and hazy, unless it is based on geographical knowledge and geographical sense. But these qualities are not canned goods. A dynamic geography, a "geography set in motion," forces us, in our attempt to shape our human destiny, to relearn constantly and to revise basic lessons of Earth and Man.

During the short armistice between the great wars, in 1935, Sir Halford J. Mackinder made a few general observations on the world pattern and the role of geography in our time. We quote them here, for they describe better than we could do in our own words, the scope of geography in our day:

Is not the crisis of today, which penetrates into every human activity and almost every larger thought, essentially geographical in its origin? Mankind has suddenly become world-conscious and has taken fright. The nations have run to their homes and are barricading their doors. They have realized that henceforth they must live in a closed system in which they can do nothing without gen-

erating repercussions from the very antipodes. In an age that may become cruel, because imprisoned, their first impulse has been to make sure of their castles of refuge . . .

You may tell me that all men have long known the world to be round, and that the Greek philosophers knew it more than two thousand years ago. True, but that was an academic dream. It was not till Magellan showed the way round that mankind at large woke to the actuality. Shakespeare made Puck put a girdle round the earth in forty minutes: that was a poet's embroidery on Magellan's achievement. But when discovery attains to the very poles, and you fly to Australia in fewer days than it took weeks, and you speak to New Zealand with the speed of light, mankind awakes with a shock to reality. . . .

Consider now the nature of geographical as compared with scientific research. The physicist or chemist has before him myriads of repetitions of the same phenomena. He abstracts irrelevant aspects and isolates the relevant, and infers a law, such that he can foretell and in suitable cases produce with certainty given results from given causes. But the geographer seeks to decipher the pattern of a unique phenomenon, the surface of this globe. There can for him be no question of law in the physical sense, since there is no repetition of the pattern. Geography no more repeats itself than does history, and though there may be similarities of distribution on the earth's surface, they can but give ground for statistical generalizations, with probabilities, not certainties, for their effect. On the other hand the pattern is complex in the sense that causes of different orders are working together to produce interconnected results. The object of the geographer is to understand the concrete complexity, not to abstract and reduce to simplicity¹

To grasp intellectually the world-wide scope of modern geography is one thing; to apply its lessons, so that they will be accepted by statesmen and nations, is very different. Man finds it easier to change the face of nature than to change his own mind. And the time is far away when it can be said that the poet's words describe not only the ideals but also the realities of tomorrow's human geography:

¹ Sir Halford J. Mackinder, Address before the Royal Geographical Society in London, May 13, 1935, *Geographical Journal*, 86·5, 6, 8 (July, 1935).

All places that the eye of heaven visits
Are to a wise man ports and happy havens.
Teach thy necessity to reason thus.

In 1943 the editors set out to undertake a symposium on political geography which they called *Compass of the World*. The title tried to convey a twofold theme of the book: its attempt to describe and analyze factors and trends in world geography, and at the same time to emphasize the northward course of the Great Powers. They chose the form of a symposium for the simple reason that any attempt to discuss intelligently the complicated facts and problems of world geography would be doomed to failure if left to the labors of one individual. Thus they tried to assemble a group of professional friends, each of whom would bring to the task some specialized knowledge in the field of geography. The result was a number of essays which, put together, could not be more than fragments in a mosaic which only the future could reveal in its entirety.

In spite of the many shortcomings which are natural to a symposium (the contributors were, fortunately, individualists, and sometimes rather stubborn ones), the book had a bond which unified its parts: we had tried to read the compass of a new world; from various angles we had described and interpreted the human geography of regions which had become, or were likely to become, cradles of conflict; we had written of new skyways, reflected on the Heartland, the northward course, and on the shifting balance of man power. Yet, in spite of the great variety of subjects, we found that we shared one basic foundation in our geographical thinking. Now, while we are engaged in the task of a new symposium, it is well to remember this unifying bond. We were aware of "the dangerous beginnings of an American geopolitics, with blueprints for American imperialism riding the waves of the future." In 1943, we described its aims as "a disillusioned balance-of-power solution on the basis of regional groupings, in preparation for what the sponsors of such 'realistic' plans consider inevitable: the Third World War."

We feel the same way today, four years after. In fact, we realize more strongly than before the challenge to a geography which may have to teach both some science and some history, to raise its calm voice and to warn against the false values of a new Manifest Destiny based on geographical half-truths.

The justification for publishing a new symposium on political geography lies in the fact that the first venture of this kind was, by its very nature, fated to remain unfinished business. The same will be true of the present volume. This need not discourage us. For such is the dynamics of human geography that what is today in focus will be overshadowed tomorrow by new trends in the relationship of Earth and Man. To state this fact means no denial of the important patterns by which this relationship is expressed in similarities and interwoven results: "The earth abideth forever. It is of the first importance to duly consider and estimate this ever enduring part." But in considering it we find the emphasis changing in our study of geography in motion. This should be kept in mind in evaluating the purpose of our book. It is neither an encyclopedia of geographical information nor a textbook on world geography covering all lands and their people. It is less and, at the same time, more. It does not try to give the reader quickly needed information on Argentina or Australia; for such purpose other and sufficient sources are easily available. What the authors of our symposium are attempting to do is to call attention to new and significant trends in political geography. In doing so, they do not claim to have highlighted all or even most of these developments. The critical reader will easily discover many unfilled gaps in our mosaic. Again, we are not too much disturbed by the truncated quality of our work. Our goal is not to give data covering the global scene but to illuminate certain carefully selected spots on the surface of this globe and, as in the case of population trends and mass migrations, to discuss vital trends affecting the human geography of our day. It has been our experience that a thorough

understanding of regional aspects of political geography supplies the student of geography and history with the tools needed for the appraisal of similar and even contrasting factors and trends in other areas.

We may illustrate this point by an example. One of the papers presented in the book deals with the realities and future possibilities of a T.V.A. in Central Europe, especially in the Danube valley. We chose this regional approach to a major problem of the world's political and economic geography rather than attempting to cover all the regions which, in the future, may develop T.V.A.'s of their own. Audacious enterprises of "geographical surgery" are shaping in the Yangtze basin, where an area of 750,000 square miles with a population of probably over 150,000,000 people may in our time experience a true renaissance which will include replenishment of more than a million acres, flood control, reforestation, and the development of what might be regarded the greatest source of water power in the world. Another example of a T.V.A. geography in motion is the Bombay plan, whose dam projects in Bihar, Bengal, Orissa, Madras, and Deccan, if executed, would revolutionize the role of India in the world at large. The Rhine-Main-Danube canal system (almost 400 miles long and extending from Rotterdam to Constanța), the Greater Volga waterway, the valleys of the Jordan, Tigris, and Euphrates, and our own St. Lawrence waterway and Missouri basin development, are other illustrations of constructive surgery in the geography of the peace. Confronted with the necessity of choosing between a scanty treatment of the major T.V.A. projects in the world's geography and a thorough discussion of one of them, we chose the latter course. We are convinced that the reader who has grasped the problems related to the T.V.A. geography of the Danube basin is better equipped to comprehend similar situations in other places that "the eye of heaven visits." The same observation holds true for most of the other topics of our symposium. All of its papers try to concentrate on physical and human regions which, in 1947 and 1948, appeared to the onlooker pivotal in the geography of the

peace which our generation must prevent from becoming another geography of the war.

In a way, ours is a modest contribution to a chapter of world history which Destiny is busy writing at this time, a chapter which we are justified in entitling: "History Is Geography in Motion." But it is not more than that. It is perhaps noteworthy that one of the most vital issues of our day, the matter of nuclear fission, has scarcely been mentioned by any of our authors. Surely, men who are concerned with the political geography of today and tomorrow should have something to say about it. The attitude of the editors, we feel, probably coincides with that of the contributors; namely, that here is an entirely new order of almost inconceivable magnitude among the issues determining the future of our planet. Short of achieving control of nuclear fission (or atomic energy, as it is loosely called), the student of human geography will have to play along with the old rules not yet entirely outmoded. Should an atomic bomb open World War III, it will shatter not only peace, people, and property but also the very fundamentals of the science of human geography as we know it. In making this statement, we do not wish to subscribe to a philosophy of hopeless pessimism. Man's achievements in the new field of nuclear fission might as well, and we hope will, open new peaceful roads which will equally revolutionize the foundations of the political geography of our day. It may well be that the day is not too far off when atomic energy will transform the desert wastes of the world into rich farming areas through its use in piping and purifying sea water for irrigation. Which is only one instance of the peaceful revolutions in the realm of the relationship of men and earth which lie before a troubled mankind, if it thus chooses. It is still time to choose. But time is running short, for it is this generation that by its actions will determine the future direction of the compass of the world.

The organization of our symposium needs little detailed explanation. Twenty-three papers are arranged in five chapters,

their titles stressing the regions and topics which the contributors are trying to emphasize because they consider them as pivotal in the political geography of our time. Thus the discussion starts out with four articles on "The Arctic and Antarctic Spheres." The compass of the world still points north. History has confirmed the judgment of the editors when, five years ago, they argued the necessity of a deeper appreciation of the Far North, whose role in our destinies they saw increase steadily and ominously. Two of these papers deal with the politico-geographical role of Canada. Americans are in dire need of adequate unbiased information on their northern neighbor. It is hard to believe that in our senior high schools the average history book of 600 pages devotes only eight to Canada. The same ignorance exists in the realm of geography.

In the next chapter, seven papers try to analyze "The Heartland and the Expansion of the U.S.S.R." They range from attempts at determining the crucial part which geographical location has assigned to the Soviet Union in the world at large to studies which explore her expansionist trends which are linked to geographical factors. A critical review of Sir Halford J. Mackinder's concept of the Heartland is followed by an analysis of the "Marginal and Interior Lands of the Old World." The Soviet Union as a sea Power and her rail, water, and air transport system are brought into focus. Of regional studies describing the expansion of the U.S.S.R., the first article of our book highlights the northward course of the Soviet Union. Paramount in importance, this deserves special attention because Americans have but a scattering of often biased knowledge of the vital trends in the Soviet Union's movement toward her northern areas. Other regional studies deal with important sectors of the Soviet empire, Yakutia in the North and the western frontiers of the U.S.S.R. The discussion winds up with a significant analysis of the population prospects of the Soviet Union.

The papers to follow are connected with the theme of Russian expansion in the West and comment on some of the more im-

portant factors of a geopolitical nature caused by the collapse of Germany's Fortress Europe. From a general discussion of the foundations of Germany's and Austria's political geography, they turn to an analysis of the future possibilities of a T.V.A. of the Danube, and of the portentous emotions accounting for the rise and decline of German "Lebensraum."

Before turning to Asia and the secular problems presented by its teeming millions, two papers on "Strategic Areas and Life Lines" are presented. To some extent they are a counterpart of the essays dealing with the expansion of the U.S.S.R. In discussing the world-wide net of strategic outposts upon which a new edifice representing the United States and British security systems rests at the present time, the writers emphasize the much too often neglected fact that the Anglo-American security frontiers have been expanded beyond the national frontiers far enough to make it imperative, for the sake of world peace, that the United Nations idea be made a strong reality in the very near future.

The final chapter is named "Asia: One Half of Mankind." No attempt is made to cover Asia's immense expanse by regions. The studies are limited to papers on such subjects as "China's Prospects," "Inner Asian Frontiers," and "The Political Geography of the New India." From there on the contributions turn to demographic problems which truly affect the future, not only of Asia but of the world. These four essays deal with the vital issues which form the roots of demographic unrest that is now disturbing the balance of the world ("Population Trends and the World's Biological Resources" and "Science, the New Machinery, and the Population of Asia"), as well as with regional studies on "Population Changes in South and East Asia" and "Demographic Imperatives for the Peace in the Former Japanese Empire."

It may be noted that not less than one-fourth of the contributions to our symposium is devoted to demographic problems. Thus, as in *Compass of the World*, the editors have tried to stress the ominous significance of overpopulation problems, the partial

solution of which is of utmost importance for the maintenance of peace.

We must realize that between 1900 and 1940 the population of the earth increased by 563,000,000 people, and during the ten years immediately preceding World War II, by 200,000,000. If suddenly India's death rate could be lowered to the level of that of the United States, India with her present birth rate could fill five earths, as full as ours, in a single century. China could do the same, and it would not take the USSR much longer.²

Only by striking at the heart of the fateful facts of demography can we hope to understand the realities and to solve some of the riddles of the human geography of this divided world. We feel that these population problems, coupled with the stark realities of geography presented in this volume, spell a serious warning which the nation should not dismiss from its consciousness.

THE EDITORS

² Guy Irving Burch and Elmer Pendell, *Human Breeding and Survival*, Penguin Books, rev ed, 1947, p. 1.

The Arctic and Antarctic Spheres

I

THE SOVIET UNION MOVES NORTH

By VILHJALMUR STEFANSSON

Few developments of the last twenty-five years differ more strikingly from one another than the northward movements of European-type populations in North America and in Eurasia. The contrast is between an intermittent trickle in the New World and a steady sweep in the Old.

When Richard Finnie in 1942 published his book, *Canada Moves North*, it was looked upon in the United States and Canada as an optimistic and heartening account of rapid and even startling progress toward the opening up of a new frontier. Yet he was able to tell of no more phenomenal Arctic growth than the population advance of the Mackenzie River Arctic village of Aklavik (see Figure 2) from a dozen to a hundred. From the sub-Arctic his most remarkable exhibits were a few hundred "radium miners" at Port Radium on Great Bear Lake, just south of the Arctic Circle, a somewhat smaller number of oil-drilling pioneers abreast of them at Norman Wells on the Mackenzie, and the beginnings of the Yellowknife gold-fields exploitation, two hundred miles farther south.

VILHJALMUR STEFANSSON, PH.D., LL.D., LL.T.D., was born in Canada, but his family moved to the United States when he was a year old. From 1932 to 1945 he was adviser on northern operations to Pan American World Airways, since 1935 more than half his time has been devoted to writing manuals, guidebooks, and reports on northern subjects for the United States Army and preparing for the Navy sailing directions of northern countries. At present he is compiling an *Encyclopaedia Arctica* with support from the Office of Naval Research, U. S. Navy. He is author of eighteen books.

Finnie wrote when the Second World War was already raging in Europe and Asia, with Canada participating, and when the United States was about to join up. But writing for seven years earlier, 1935, Dr. Ruth Gruber, correspondent of the *New York Herald Tribune*, was able to say in her book, *I Went to the Soviet Arctic*, that she had seen on the lower Yenisei in Siberia, fifty miles north of the Arctic Circle, a lumber-milling city named Igarka (see Fig. 1) which had been developed in four years from a village smaller than Canada's Aklavik to a city of 10,000, with movie theaters, a regular theater, a daily newspaper, city water works, and a hospital equipped with such modern gadgets as appliances for light therapy.

Writing for a year later than Dr. Gruber, H. P. Smolka, correspondent of the *London Times*, was able to confirm her Igarka story in his book, *Forty Thousand Against the Arctic*, and to add such details as that he had seen along the quays more than a dozen ships under half a dozen flags loading cargoes of lumber for destinations all the way from northern Europe and Britain to South Africa.

Meantime, in the interval between the Gruber and Finnie books, Igarka had grown to a 15,000 population. Nor was that an isolated case. Nearly 200 miles farther north, thus about 250 miles north of the Arctic Circle, a hundred-mile railway had been built from the Yenisei river port of Dudinka eastward to the strategic mineral center of Norilsk, the population of which, apparently still a military secret, is commonly supposed to have been 35,000 or 40,000 in the early part of World War II and to be larger now.

There are many other cities, towns, and villages north of the Circle that have grown in population the last ten years from dozens of people to hundreds or thousands, from thousands to tens of thousands. According to figures given on the floor of the Canadian Parliament in July, 1947, there were then 500,000 people in the Soviet Union north of the Arctic Circle. This would be as against some 20,000 in Alaska, Canada, and Greenland combined.

The difference between northward developments in the New World and the Old is not wholly, nor even chiefly, in the growth of isolated towns and cities. For instance, there is the contrast in the use of Arctic seaways. Printed evidence has long been available to show that it would be easier for freight steamers to navigate from the Atlantic to the Pacific by the Northwest Passage than by the Northeast with ships of large capacity, say 10,000 tons. Yet the harder Northeast Passage had been in use for a decade before the navigability of the Northwest Passage around the north of Canada was demonstrated by an actual voyage. For it was only in 1944 that the power vessel *St. Roch*, of the Royal Canadian Mounted Police, under command of Inspector Henry Larsen, made the passage and gave out the facts which are now to be read, among other places, in U.S. Hydrographic Office Publication 77, *Sailing Directions for Northern Canada, 1946*.

The Larsen voyage was carried through on behalf of Canada when the Second World War was drawing to a close. But, before that war started, as many as twenty Soviet vessels in a single year had made the northern passage around Asia; one ship had made the passage forward and back in a single navigation season; at least two hundred ships were occupied along various sections of the Northern Sea Route, against two or three for Canada.

However, the two hundred vessels of the U.S.S.R. employed methods which had been in almost equally long use by Canada. For the Hudson's Bay Company had developed a program of sending steamers east from the mouth of the Mackenzie River to supply their trading posts along the northern coasts of the Canadian mainland, and posts in the neighboring Canadian islands, as far east as Fort Ross on Boothia Peninsula; while other Company ships came from the Atlantic that far west. Still, this meant normally in Canada only that a single ship per year worked from each direction, as against the mentioned two hundred Soviet vessels.

Obviously there must be fundamental reasons of outlook, of policy, of recognized need, which account for this striking dif-

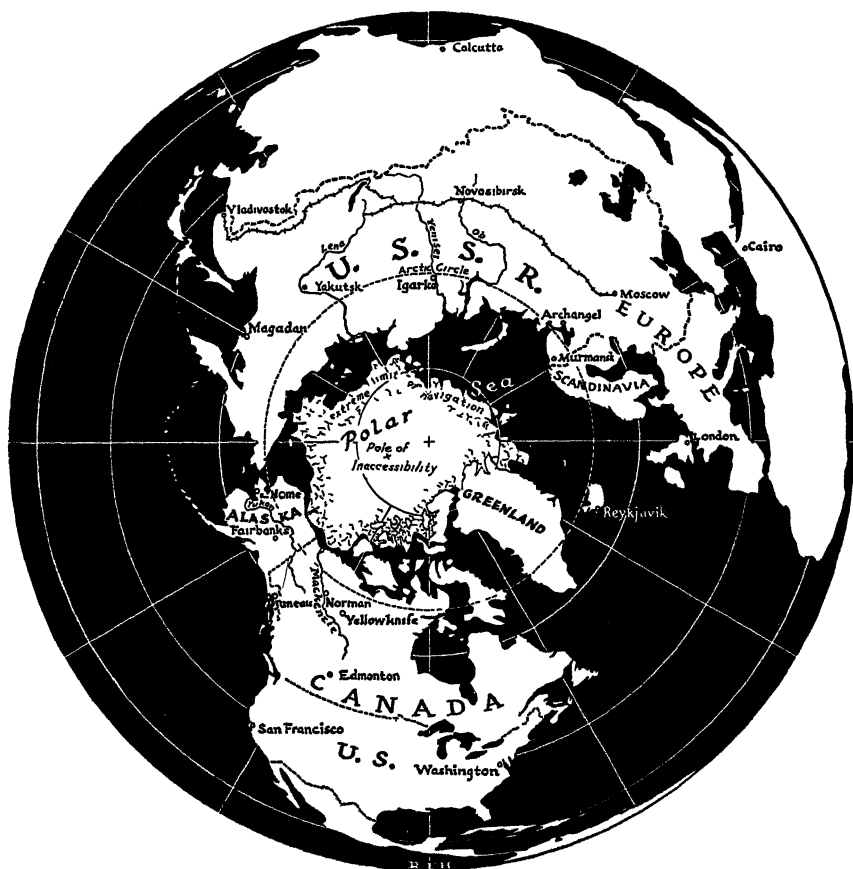


Fig. 1. The Northern hemisphere (orthographic projection), showing the Polar Sea and the political division of its littoral.

ference between Old World and New World developments. We shall come to them; but first a glance at wartime and postwar changes in the northern parts of the two continents.

Both in North America and in Eurasia the existence of Arctic petroleum has been well known for a long time. Years before World War II a part of northern Alaska had been set aside as an oil reserve for the United States Navy, but there were no

moves toward active development until the war was nearly over. Since 1944 there has been semisecret oil-drilling activity in this reserve, and the prospects currently seem excellent for the demonstration of large petroleum reserves. But prompt commercial development of northern Alaska oil, on a peacetime basis, seems unlikely in view of what appears to be a set United States government policy, according to which we have already discontinued the use of a sub-Arctic oil pipe line and other facilities which were built during the war at some such cost as \$150,000,000,¹ from the Norman oil field on the Mackenzie to the Alaska port of Skagway on the North Pacific, the famous Canol Project.

Neither is there any publicly known plan for developing the oil resources of the lower and middle Mackenzie for immediate use. The attitude of our two governments seems to be, for Alaska and northern Canada, that we are glad to know that we have great northern petroleum resources so we can bank on them for some moderate or remote future. Meantime, thousands of miles away both from the Arctic and from our own shores, we press for immediate tropical and subtropical drillings, pipe lines and storage depots, as in Saudi Arabia.

But, although things in the proper Arctic move slowly with us, there is considerable enthusiasm for the sub-Arctic, particularly in Canada. Two medium-northerly developments were under boom conditions in 1948: uranium exploitation in the Port Radium vicinity of Great Bear Lake, which is just south of the Arctic Circle, and gold mining in the Yellowknife region, 300 miles farther south. This fits in with our long tradition, both United States and Canadian, of going in for energetic frontier exploitation of the precious metals—gold, platinum, and now uranium. In this field we led Imperial Russia of old; and today we may be holding our own with the Soviet Union in the international competition for northern gold. However, U.S.S.R.

¹ The "official" figure is around \$134,000,000; but this is generally recognized as a down grading by shifting certain Canol expenditures to other accounts.

gold production is apparently a state secret, if not a military one, and all we know definitely is that they are paying for a good many of their imports in bullion. As to uranium, we suppose ourselves to be well in the lead.

The U.S.S.R. couples with its northern mining the development of transportation, in which respect we tag along far behind. Later in this chapter we deal with roads, railways and river traffic. Here we remark that there seems to be in Canada no open program for following up Inspector Larsen's 1944 demonstration of the availability of the Northwest Passage by any systematic use that would correspond to the systematic use of the Northeast Passage which is being made by the Soviet Union.

The Old World contrast with this New World situation can be dramatized by a sketch of what is going on, and what is contemplated, under the fourth Soviet Five Year Plan, in the valley of the Pechora. Apart from things like agriculture, the chief economic developments there come under three main heads, the Pechora railway, the Vorkuta coal mines and the Ukhta oil fields.

Apart from the Scandinavia-Kola lines which serve permanently ice-free waters, the Pechora line is the world's most northern railway. Its terminal, Vorkuta, is about 70 miles north of the Arctic Circle, which is as if that city were 120 miles north of Fairbanks, Alaska's most northerly railway terminus, or 400 miles north of Whitehorse, Canada's most northerly station, or about 600 miles north of Churchill, the most northerly rail terminal on the Atlantic side of Canada.

The Pechora line runs across permanently frozen ground the whole distance and serves a country where midwinter temperatures are as low as in any part of Alaska or Arctic Canada. Its full length of 700 miles was built with record speed during the first part of the war when the Germans were taking over the coal fields on the Don and elsewhere in the southwest. It was opened for traffic in 1942, when the Germans were advancing on Stalingrad, and began pouring southward coal that helped to offset the loss of the southern mines.

It is said that the Pechora railway will be extended to the Kara section of the Arctic Sea.²

The city of Vorkuta is at 67° 31' N. and 64° E., which is near the center of a coal region that is considered as the fifth largest in the Soviet Union, and as ranking among the best in quality. During 1947, twenty collieries were reported to be in operation the underground workings mechanized in a modern way, with a total underground length of four miles. According to the applicable Five Year Plan the coal production is to be 7,700,000 tons annually by 1950. This would fill most or all the needs of the great industrial city of Leningrad, 1,200 miles to the south and west, in addition to most of the needs of the Murman-Archangelsk district.

Though known abroad chiefly as a mining hub, Vorkuta is locally important as a center for higher education, with technical schools, a college, and a medical school. Its population in 1946 was 30,000. The city is being developed to produce mining equipment and to serve the building industry of the Komi Autonomous Republic. The demand for vegetables and milk is supplied by local farms (which milk-vegetable development, incidentally, finds a successful parallel at Fairbanks, Alaska, only about 100 miles farther south than Vorkuta).

Just south of Vorkuta, on the Usa River, the National Academy of Sciences has established a special research station for cold-weather problems, with transport and construction engineers, geologists, botanists, meteorologists, and agricultural scientists on the staff.

As Vorkuta is the center of the coal industry in the Pechora region, so is Ukhta the center for oil production, with an estimated petroleum reserve of 36,000,000 tons as against the estimated Vorkuta coal reserve of 120,000,000. Although located on the navigable Pechora River, Ukhta was small until it became an oil-boom town in the early thirties. When the railway toward

² Soviet sources of 1946 give the inland city of Vorkuta as the terminal. English-language sources of about two years earlier (e.g., Scott Polar Research Institute) state as accomplished fact what USSR sources state as a plan—the extension of the railroad to the Arctic coast.

Vorkuta passed through in 1937 it had a population of 23,000, which is reported by the Tass Agency to have reached 40,000 by 1939. The latest available production figures are for 1945, when the output was 719,000 barrels. Since 1940, the Ukhta vicinity has also been a producer of radium.

As said, there must obviously be strong reasons of outlook, need, and policy that determine and explain such striking differences in northward development as those we find between northern North America and northern Eurasia. We mention some of them:

Most Canadians live in the south of Canada, and most citizens of the United States still farther south—thus without conscious familiarity with the sort of climate one finds around and beyond the Arctic Circle, which they dread, through lack of familiarity. True, the winters of the Dakotas, Montana, and Wyoming are in reality very similar to those of the Arctic; but people in these and other cold-weather states do not realize the similarity and imagine that conditions 1,000 miles farther north than northern Montana would be very different—and the supposed difference wears in their imagination a terrifying mien.

But in the Soviet Union millions of Russians are consciously familiar with Arctic conditions, and there are other millions of non-Russians in that vast country who have grown up in the Arctic or on its margins and naturally are reconciled to, and in many cases fond of, the climate to which they have always been accustomed. So there is not that break with tradition, those wrenches and fears which afflict southerly North Americans when they think about northward colonization—if they do think of it.

But perhaps even more important in the U.S.S.R. than the general familiarity with long and cold winters is the special familiarity with true Arctic conditions that was acquired through the Siberian exile system. The men whom the Czar's government most deeply feared were, as a rule, sent to the remotest parts. Stalin was one of many banished to the Arctic. He was exiled for three years to the lower Yenisei, not far from the present lumbering center of Igarka. It was natural that these

archenemies of the Czar's government, who had been exiles, became in 1917 leaders in the Soviet government. They still are leaders—not merely Stalin, who of himself wields great influence, but also many of his early colleagues. These men of necessity have a realistic outlook on northern conditions. They know from experience the problems of northward colonization and have a grasp of its prospects.

Those of us who specialize in Arctic studies are continually asked by our fellow Americans why the attitude of the Soviet government toward the Far North is so different from that of the United States and Canadian governments. To reply that this difference results from the exile system is more enlightening than it is whimsical. The Czar did exile Stalin to the Yenisei Arctic. If Robert Borden had had the good sense to exile a threatening young rival of his named Mackenzie King to the Canadian Arctic, and if Calvin Coolidge had had the foresight to exile Franklin Roosevelt and Harry Truman to the north coast of Alaska, we might have had in both our countries these many years national attitudes and governmental programs with regard to the North strikingly different from those under which we actually have had to work.

Waiving such daydreaming, and the attitudes of populations with regard to the Far North, there remain answers that are sufficient in themselves for explaining the differences of Arctic policies between the Old and New worlds. There is, for instance, the difference in memories and theories of war.

When Imperial Russia lost her military contest with Japan, at the beginning of the century, a main reason commonly given throughout the world, and the facile excuse seized upon by Russia, was the breakdown of her transportation system. The tropical sea route from the Baltic and Black seas to the Far East was long and difficult, because the fleets of the Czar could not use the Suez Canal and had to circumnavigate both Africa and Asia by the south. There was as a result a nearly exclusive dependence upon the Trans-Siberian Railway, which was single-tracked and immediately became congested.

With this memory, and with their theory of Capitalist Encirclement, it seemed obvious to the Bolsheviks when they came to power in 1917 that for the coming struggle which they postulated they would need, above everything, better transportation. No more than the Czar, even less, could they hope to use the Panama or Suez Canal, for they expected hostility from Britain and the United States as well as from Japan. So they concentrated through the first three of the Five Year Plans upon two things: the double-tracking and improving of the Trans-Siberian Railway, and the opening of a northern seaway. During the decade which immediately preceded World War II there was constant talk in Soviet publications about the imminent struggle with Japan, in which the Northern Sea Route would be important. Indeed there smoldered at the time an undeclared and not such a small-scale war with Japan that continued endemic in the Manchuria region, and in relation to which the seaway played a part.

So, between wars, the Soviet Union felt keenly the need of a water route between Atlantic and Pacific. In Canada the transportation situation was just about the opposite. Moscow worried that there would be too much traffic on her east-west railway. Ottawa, with two railways on her hands running through the southern fringe of her territory from Atlantic to Pacific, worried instead that there would not be enough traffic to enable both roads to show a profit. There was every reason in the Soviet Union to hope for the success of a northern sea passage around Asia that would relieve the congestion of their one transcontinental; there was every reason in Canada for hoping that no northern seaway would be opened to short-circuit Canada and to impoverish her two transcontinentals by taking cargoes without an overland hiatus from Europe to Asia by way of the Arctic Sea and Bering Strait.

Had there been already a dense population along the northern shores of Canada there would have been a pull, no doubt, for an ocean service by vessels that would call at this port and that between Atlantic and Pacific. But, with the token exception of a

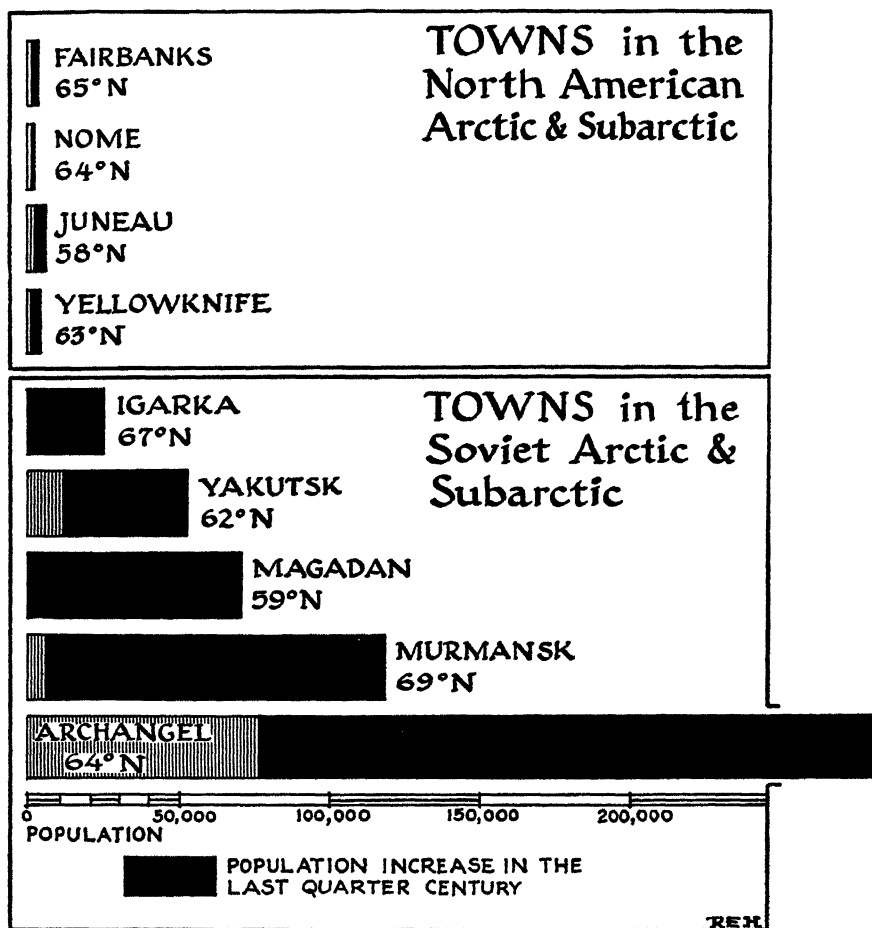


Fig. 2. Chart illustrating the impressive difference in urban development in the American and Soviet Arctic regions.

few thousand citizens in Yukon Territory, there was no one in the whole northern half of the Dominion voting in the election of members of Parliament. Surely 95 per cent of all Canada's people lived in that narrow southern strip which is served by the Canadian Pacific and the Canadian National systems.

So practically everybody who counted was anxious that traffic

should be maintained at the most nearly congested level on both these southerly transcontinentals. And this was no conspiracy of the money powers; for labor unions felt the same way. Long-shoremen, for instance, wanted the privilege of unloading steamers in Montreal and transferring the freight to the railway. Corresponding labor unions in Vancouver were equally keen to have the handling of the goods as they were transferred from rail to Asiatic steamer. The employees of both railway systems throughout Canada's 3,000 miles of breadth wanted a maximum of rail traffic so that there would be the maximum number of jobs and the highest possible rate of pay.

The ramifications of such forces in Canada are endless. From the highest and the wealthiest down, everybody wants the Asia-bound goods and passengers of Europe to cross southern Canada. Canadians are reconciled through long usage to competition from United States transcontinental railways; they cannot do anything about the Panama Canal. But they can and do cultivate a thoroughgoing lack of interest in the development of a northern Canadian seaway, and they nurse an inured skepticism towards the feasibility of the Northwest Passage, over which arguments now and then get into speech and print.

Nor does Canada or the United States have nearly that consciousness of an impending attack from the rest of the world which is leading the Soviet Union not merely to hurry along the improvement of transportation but also to think about and to use a policy of defense in depth.

A defense-in-depth program is no new thing in the U.S.S.R. When during the thirties, for instance, Finnish newspapers and magazines were priding themselves on the Mannerheim Line, and saying that their long-range cannon were so placed that they could shell both Leningrad and Kronstadt, the Soviets found themselves in reluctant agreement. Ambassador to the United States Constantin Oumansky, for one, spoke of it as a weakness of the U.S.S.R. that it had permitted a concentration of industry so near the frontier as Leningrad.

From the first Five Year Plan onward, there was in the

U.S.S.R. a tendency to build up the cities of middle Siberia, so as to get the defense-in-depth benefit of production centers that were far from Germany on one hand and from Japan on the other. There was a similar tendency to move production centers northward; for in those days the Soviets did not fear attack by the United States or Canada from the north across the Arctic, but did fear attacks from west and east, really from southwest and southeast.

That the U.S.S.R. could get farther away from the militarily powerful centers of Europe not only by going east but also by going northeast was, under the first three Plans, another motive for Arctic colonization and the cultivation of the northern seaway. No such motive for northern colonization or Northwest Passage transportation was at that time felt in North America.

But, according to the newspapers, this motive is appearing in North America now. For during the early months of 1947 the press dispatches quoted Major General Howard Craig, United States Army commander in Alaska with responsibility for Operation Frigid, to the effect that the only sound defense policy for the continent, with regard to its northern frontier, was the colonization of Arctic Canada and Alaska.

Similar conditions produce like results. The fear of attack felt by the Soviet Union from its beginnings as a government became in the twenties and thirties a force for northward colonization. Obviously this force must have been strengthened recently. The talk in United States and Canadian newspapers about the military importance of our northern frontier naturally confirms and strengthens the Soviet view that there is danger of attack from capitalist nations, and now from another direction, the north.

Caused no doubt in part by some of the factors we have already discussed, there has also developed in the U.S.S.R., particularly since 1940, a popular urge toward the northern frontier that has had both its significant parallels and its enlightening contrasts in North American history.

There was a time in the United States, between the Louisiana purchase and the California gold rush, when public opinion in

the only section of the country which was then thickly settled, the Atlantic seaboard, was strongly against any one who favored westward expansion. The hostile propaganda in the Atlantic states against the Mississippi Valley, and the West generally, did not break down for half a century; and it broke only when droves of people started crossing the plains for California, to discover on the way, among other things, that the Great American Desert, about which their schoolbooks had instructed them as a vast and continuous Sahara, did not exist, though there were patches of desert here and there. It was partly the reports of gold in California, but even more the prospect of harvesting golden grain, that set going the tide of westward colonization, and that engendered those vague and rosy dreams of a future that would become glorious when our land should be colonized all the way to the Pacific.

Corresponding development of a propaganda against the West was somewhat retarded in Canada. It had its parallel and high point about twenty years after the United States propaganda had died down and collapsed in the eighties, after the building of the Canadian Pacific Railway.

In the great North American colonizing period, from 1850 to 1890, "western" came to be a word to conjure with, and so crept into the names of many organizations. The Western Union Telegraph Company, for instance, was so named not just because it was planning to expand westward but in part because the very name "western" had in those days a sound of confident promise.

A colonizing spirit like that of North America of the 1850-1890 period now appears to have developed in the Soviet Union, particularly since the spectacular success of the Administration of the Northern Sea Route, under the direction of Professor Otto Schmidt, assured the country that there was indeed available a northern water transportation highway between the Atlantic and Pacific. Just as most of our people at one time looked with hope and anticipation toward the growth of our uncolonized West, so many in the Soviet Union, perhaps especially the Russians,

look with anticipation and enthusiasm now toward the development of their uncolonized North.

The usual postwar reports of 1948 have it that, whenever a northern development is planned, there are in the Soviet Union more volunteers for the assignments than can possibly be accepted. These reports are confirmed by foreigners who speak the language and have been resident long enough to get the feel of the situation. For instance, Maurice Hindus, a born Russian who has spent many years in the Union, is in agreement. When told in New York recently about a young Leningrad woman, with reference to plans for her university training, who said to her family that she wanted any sort of education which would fit her for Arctic work, Hindus commented that in his experience the reaction was typical, both for men and for women.

Ruth Gruber has brought out in her book, *I Went to the Soviet Arctic*, the large role which women play on that frontier. One of her most impressive chapters is the account of the woman mayor of Igarka, Valentina Petrovna Ostro-umova, who bossed that city and tried to look after everybody and everything with much the strident optimism and gusto of Fiorello La Guardia of New York.

The love of Soviet women for the North is a true sign of popular enthusiasm about their frontier. It was like that in both the United States and Canada during the nineteenth century colonization period, when women were as eager as men to go West and grow up with the country.

Whether or not the mayors are feminine, the approximate equality in number of women and men, in the cities and towns developing along the Arctic coast of Siberia, is an index to the healthy and permanent nature of this growth. In our New World Arctic it is different about the women, in numbers if not in sentiment. For on the northern coast of North America, from Bering Strait to Hudson Bay, it is not merely that the towns are small, with populations only in the scores or hundreds, but also that among the incoming whites the women are few. In the Soviet Arctic the white women expect to live there perma-

nently—an expectation that is rare, though not absent, in Arctic America.

Soviet coastal cities along the Northeast Passage are not maintained wholly to serve the traffic between Atlantic and Pacific. Quite as much, they have been planned and built to aid in handling the commerce of interior Siberia.

It is one of the most significant things about northern Asia that all the great rivers flow north. Three of them—the Ob, the Yenisei and the Lena—are each the size of the Mississippi. They take their rise almost in the center of the world's greatest continent and are navigable for around 2,000 miles each. Pending the development of a northern railway system, they are the chief highways of commerce, bringing out, for use in the Soviet Union and for world commerce, the produce of an area larger than the whole United States. In this work the chief rivers are aided by a number of other streams that would seem great except for the overwhelming volume of the Big Three.

Nor do these rivers serve merely as liquid highways in summer, with steamboats that remind one of the Mark Twain era on the Mississippi. They are inactive for only a month or so in the autumn, when the ice is thickening, and in the spring when it is breaking up. From October through the winter to May an Arctic or sub-Arctic river is a level boulevard of ice concrete and snow along which glide, with a minimum of friction, long trains of sledges drawn by caterpillar tractors. Canada has demonstrated that a single tractor can pull a train of more than a thousand tons on a river, where there is no appreciable upgrade or downgrade. We have no figures on this kind of Soviet traffic, but there is little doubt that the tractor trains which they use are of equal length and capacity. For it turned out in the late war that Red Army heavy tanks were as good as the best, which will necessarily mean ability to produce heavy-duty commercial tractors of like quality.

So it is in part to handle the traffic of the rivers, to carry the produce of their valleys out for Soviet consumption or foreign trade, that there have been developed along the north coast of

Siberia, at or near the delta of every considerable river, ocean ports which are well financed through the Five Year Plans, and which are steadily advancing in size and mechanization. Before World War II there were reported on the Lena River 130 steamers and 500 barges, which would indicate heavy business for Tiksi and the other ports in or near the delta, where goods are shifted from river boats to ocean-going steamers bound along the Northern Sea Route to Atlantic or Pacific. Both Ob and Yenisei doubtless equal the Lena in summer traffic by steamer and winter traffic by tractor.

In the past many motives have led toward the colonization of the Soviet Arctic; now at least one new motive appears in the Soviet press.

Our newspapers have been saying that while there is no proper defense against the atomic bomb, still there are at least counter-measures, one of which is for people and for industry to scatter. Likely enough, something is being done about this, or at least planned, by a number of countries. At any rate, newspapers and radio keep telling us that one of our great weaknesses in an atomic age is our overgrown cities, and we are admonished that people must leave them and build up dispersed industrial centers.

What we are saying in the United States is also being said in the U.S.S.R., and it seems probable that more is being done about it by them than by us. At any rate, it is commonly reported that, while their cities that were destroyed by the war are being rebuilt with dogged energy, an even greater energy and more enthusiasm are being put into the building of new cities and the enlarging of small frontier towns into bigger ones. Reportedly the percentage of city and village growth is in few, if any, sections of the U.S.S.R. so large as in the Arctic and the immediate sub-Arctic.

One of the clearest signs of the northward Soviet urge is the development of scientific research stations and the support of northern industry. In some of these things we follow along, though lagging. The United States and Canada together may possess five or six true research stations north of the Arctic Circle

—set-ups for the study not alone of conventional meteorology, magnetism, and things of that sort but also of a number of other sciences, among them the biological and human. This half-dozen effort on our part corresponds to perhaps 60 research stations of the same kind in the Soviet Union, some of them with staffs which, in numbers and in specialties cultivated, resemble the scientific divisions of the faculties of our small colleges—say from ten to twenty specialists doing research in a dozen sciences at any one of scores of the Soviet Arctic stations.

Indeed, we are generous to North America in this contrast with Eurasian facilities when we suggest that there are a half-dozen North American research stations which are rightly comparable with scores of the Eurasian in that they are more than mere weather stations for routine observations in things like meteorology, magnetism, radio. Probably the characterization "scientific station" should be employed for only two establishments in the New World part of the Arctic.

There has long been at Disko Island, Greenland, a research center maintained by the Danes, where visiting scientists could get board and lodging at minimum cost and certain facilities for such work as geology, botany, zoology, and anthropology. Apart from this the public knows of only one proper Arctic research station in the Western Hemisphere. Its establishment was announced by the United States Navy Department, in a statement which reads:

Seven civilian scientists from Swarthmore College, Swarthmore, Pennsylvania, and Cornell University, Ithaca, New York, are scheduled to arrive at Barrow, Alaska, early this month to begin a Navy-supported program of biological research within the Arctic Circle.

To gain knowledge of the biological acclimatization and adaptation needed by humans in the Arctic, the group will study the metabolism of warm- and cold-blooded animals, the expenditure and economy of animal heat and the physiological basis of orientation of Arctic birds during migration.

The research program, being conducted under contract between the two institutions and the Office of Naval Research, will continue

for a year in order to permit the scientists to follow their studies through the transition from summer to winter and from winter to summer, and to reveal the stresses imposed upon Arctic life by climate and profound and rapid seasonal changes.

Barrow, a village settlement about ten miles southwest of Point Barrow, the northernmost point of Alaska, is in an area that has not previously been subjected to biological research.

The scientists, who are scheduled to be flown to Barrow from Seattle, Washington, by the Naval Air Transport Service, are Dr. Laurence Irving, Dr. Per F. Scholander, Dr. Erik Tetens Nielsen, Dr. Reidar Wennesland and Mr. Walter B. Flagg, of the Department of Zoology, Swarthmore College, and Dr. Donald R. Griffin and Mr. Raymond J. Hock, Department of Zoology, Cornell University.

It is understood that the Barrow station may grow in size and scope through providing housing and other local facilities for visiting scientists. It is believed also that, with a Greenland research station to the east and an Alaska station to the west, Canada is likely to establish one or more Arctic scientific stations. She has one sub-Arctic station of this type, at Baker Lake.

Apart from what we learn incidentally by work like oil drilling and the laying out of airports, the United States and Canada are beginning to study ground-frost systematically, a work which had practically its start with the United States Air Forces at Edmonton, Alberta, during the war under the direction of Brigadier General Dale V. Gaffney and through the immediate leadership of Professor Siemon William Muller of Stanford University. This specialized work has now been taken up by Army engineers in places like St. Paul and Boston. However, we operate on a small scale when compared with the U.S.S.R. which has special institutions with large staffs in the Arctic or sub-Arctic and has already been carrying forward this work through several years, in addition to what had previously been done by scattered scientists. Its leading station, now called usually the Obrucher Permafrost Institute, began work in 1930 and now has a staff of about forty scientists and technicians.

Another sign of the times in the Far North comes from the reindeer industry. In Alaska we started reindeer breeding half a century ago with 1,280 head, imported from Siberia between 1892 and 1902. For thirty years thereafter the herds prospered as if in a success story. They doubled every three years until 1930, when there were half a million or a million, according to different counts. Then, apparently through the machinations of the cattle and sheep men of the States, who feared competition from a new meat that became instantly popular wherever it was served, there was put into effect a Federal Government policy in Alaska which resulted in the practical destruction of the reindeer industry.

According to estimates of the United States Department of Agriculture, Alaska has permanent grazing for about four million reindeer, meaning an annual meat yield equivalent to eight million sheep. If the old policy had been maintained, which encouraged the shipment of reindeer meat to world markets, there is no reasonable doubt that the four million grazing limit would have been reached, or closely approached, by the beginning of our participation in the war; so that, among other things, there would have been abundant local fresh meat in Alaska for our troops, as well as skins for warm clothing.

What had happened meantime was, however, that governmental opposition had prevented the continued success of the large corporations which were maintaining abattoirs, purchasing reindeer from all comers, and shipping meat to the States. When these local packers, the only large-scale purchasers, had been driven out of business the Eskimos and others who owned herds lost interest in them because there was no market; so they let the beasts wander off and join the herds of their cousins, the wild caribou. Other large numbers were killed by wolves when the owners ceased bothering to protect them, or shot by their owners for the skins. The result was that when war came the help our Army got from Alaska reindeer was negligible; nor do we possess any large and growing herds there now as one more resource to help attract colonists and to feed them.

While this was happening in Arctic and sub-Arctic Alaska, a new and better era was dawning for the reindeer industry in the Old World, from Bering Strait along 4,000 miles of Arctic coast to Finland. Colleges of animal husbandry, specializing in reindeer, were set up; large funds were appropriated, and many scientists and other skilled men were employed. So, remote from Nazi attack (except near Finland), there was a steady and substantial growth in reindeer numbers and quality throughout Arctic Siberia during the period when the cattle and sheep of the invaded southern and western lands of the U.S.S.R. were being destroyed by the German Army.

Backward as we of the United States have been in northern matters, we do have in Alaska an agriculture department connected with the territorial university, and there is an affiliated experimental farm. However, the appropriations are small, and the staffs limited. It is surely conservative to say that for every dollar that has been spent during the last ten years by Arctic Alaska and Canada together, for the advancement of animal husbandry, at least a hundred dollars have been spent by the Soviet Union; more likely the ratio is a thousand to one.

A straw in the same wind is the taste of the reading public. Books on the Arctic are small sellers in North America but have long been best sellers in the U.S.S.R., and there have been scores of them during the last twenty years. Works on the Arctic in foreign tongues are translated into Russian, and sometimes into other languages of the Soviet Union; not uncommonly, they sell there ten times as many copies as they did in the lands of their origin.

For good or ill, it is significant that in the U.S.S.R. polar explorers are thought of as pioneers. Americans persist in thinking of them as heroes.³

³ The title Hero of the Soviet Union is said to have been won by a higher percentage of polar explorers than of any other class. This might seem to mean that they, like us, look upon the explorers as a hero class. But the point is really one of semantics, for "hero" does not seem to mean with them what it does in English. Hero of Socialist Labor, for instance, does not imply risk of life but rather outstanding qualities of peaceful and useful leadership.

For the reasons mentioned, and for a variety of others, there has been, then, under all the Five Year Plans, a steady and strong northward movement of Russians, and of the other temperate zone peoples of the Soviet Union. The result has been a rapid large-scale colonization, perhaps the most rapid in history.

We have dwelt so far on the contrast between this sweep of migrants in Asia and the trickling movement in North America. The New World trickle of whites northward has not even been a uniform increase during the last twenty or thirty years, for there was actually a considerable retrogression in Alaska's European-type population during the interval between wars—there were more people in that Territory at the beginning of the First World War than there were when the second global war started. But a case can perhaps be made that no less significant as an element in world history has been the difference in the American and Asiatic roles of the northern peoples themselves, those who had "always" been in the Arctic or on its fringes.

Both in Canada and in Alaska the Arctic natives have been, from the development point of view at least, as much of a liability as an asset. True, the Hudson's Bay Company and a number of smaller trading concerns and individuals have made some money from dealing in northern furs. As we have said, there was a time between the world wars when the reindeer industry of Alaska was growing by leaps and bounds, so that it looked as if the Territory might soon become a notable supplier of meat and leather. But, for the reasons mentioned and for others, this process was reversed about twenty years ago, so that the industry is of negligible current importance, and of no future significance unless there is a change in policy. That the Eskimos do own the few reindeer that remain is scarcely here or there.

Still, as to this Eskimo-controlled pastoral industry, we must make an exception in favor of Canada; for a thousand or so reindeer, obtained from Alaska during the interwar period, were turned over to the Mackenzie District Eskimos and have been increasing since then at approximately the same rate as they formerly did in Alaska. There are as yet no signs that the cattle

and sheep men of the Dominion are going to attempt hamstringing the project. Moreover, it seems likelier that Canada will profit by the lesson of the Alaska debacle than that the Alaskans themselves will recover from it.

With small exceptions, then, and for the reasons brought out by Richard Finnie in another part of this book, the natives of the North American Arctic have not been used by Canada or Alaska as building blocks in the architecture of northern progress. Among other things, they are being Jim-Crowed, to a greater extent in Alaska than in Canada; but even where they are treated with consideration and kindness, as in many sections, they are also treated as children, though without that anticipation of their later becoming an asset which our families have when they bring up their own children. The white man's attitude throughout northern North America is that—mentally, socially, economically—the Eskimos are never going to grow up.

Still here we must again make some exceptions; for there are among the Eskimos constructive movements, such as buying and selling cooperatives, though as yet only in Alaska.

These things are very different in the Soviet Union. In that country, according to different ways of looking at it, they have fifty, a hundred, perhaps even two hundred different peoples, each treated as no better and no worse than any of the others. This has meant, among other things, a progress in book learning such that their Eskimos, Chukchis, Nentsi, and the rest of the polar groups, are fast approaching 100 per cent literacy, which is one of the most eagerly sought goals of Soviet policy.

Together with progress in letters has come in the Soviet Arctic a parallel industrial and social progress; so that the Eskimos, and the other northern peoples, are airplane pilots,⁴ tractor

⁴ The *Alaska Weekly* of June 20, 1947, carried the news that two United States Eskimos, war veterans who had served in the South Pacific and in Italy, were being trained as airplane pilots. Apparently these are the first to become flyers out of 22,000 of that people who live in Alaska. About 1,200 Eskimos live across Bering Strait in Siberia. According to prewar Soviet newspapers, six of these had pilot licenses in 1940, one of them with 170 solo hours. All six were later reported to have gone to the front as military flyers.

mechanics, doctors, nurses, schoolteachers, veterinarians, biologists, sopranos, band leaders, mathematicians and whatever else any of the other Soviet peoples are able to be. This means that in the U.S.S.R. the Arctic natives, whatever their number, are the economic and developmental equivalents of that many European immigrants. Indeed they are no doubt of considerably higher individual value; for if they are perhaps somewhat behind such other Soviet people as the Russians in scholarship, they are at least that much ahead of the Russians in knowing how to live on the Arctic prairie or along the coasts of the Frozen Sea.

There is, then, at a minimum, a striking picture in contrasts from the opposite shores of the polar mediterranean. We shall, no doubt, each of us draw from this a lesson that fits our temperaments and philosophies. But, for all of us, it cannot help being one of the more fascinating of coming world prospects to bide our time, in that era of peace and of understanding for which we all hope, and to watch the flowering and the fruit stages of these contrasting situations and programs, of North America and of Eurasia.

Is the Old World wise in pressing northward? Is the New World wise in holding back?

2

CANADA'S NORTHWARD COURSE

By RICHARD FINNIE

A quarter of a century ago Vilhjalmur Stefansson wrote a book called *The Northward Course of Empire*, urging the development of the Canadian Far North and calling attention for the first time to its strategic world position in the coming air age. When that book was published Stefansson was dismissed by many skeptics as an impractical visionary. He has since had the satisfaction of seeing some of his dreams realized, although few of the people who marvel over the "new" concept of transpolar air routes as shown on global maps are aware that just such a delineation appeared in *The Northward Course of Empire* as far back as 1922.

Early in 1942 my *Canada Moves North* was published. Reviewing the history of the Northwest Territories, the book took stock of the region's inhabitants and resources. It showed that some remarkable strides in mining and transportation had been made in recent years by private companies, but that too little intelligent attention was being given to the welfare and education of the natives, and that understanding of the North by the

RICHARD FINNIE was born in Dawson, Yukon Territory. Since a summer visit to Ellesmere Island and Greenland in 1924 he has made a half dozen summer journeys through the Canadian far north, and he spent there one winter, around Coronation Gulf. In 1930 he was a member of the first aerial expedition to survey the vicinity of the North Magnetic Pole. During 1942-1945 he was field consultant on and historian of the Canol project, first working for the civilian contractors and later for the United States Army. He is author of *Lure of the North*, 1940, *Canada Moves North*, 1942 (revised edition, 1948); *Canol*, 1945.

people of Canada as a whole, as reflected in their government's policies, was ill informed and unprogressive.

War is an ill wind, but it always stirs up a few back drafts that do good. A back draft blown by World War II that was unquestionably good was the attention it sharply focused on the North American Far North. Americans and Canadians at large were made aware as never before of the nature and potentialities of Alaska, the Yukon, the Northwest Territories, Labrador, and Greenland; and thousands in the armed forces or in civilian employment with construction companies spent months or even years in sub-Arctic and Arctic areas which they had not known existed. Some will return to the North on their own; all but the disgruntled misfits will help by word of mouth to paint a clearer, brighter picture of the North. Those thousands constructed and manned diverse installations which, whether fully used in peacetime or not, are all keys to progress. After an undeveloped but rich country has been suddenly laced with roads and airfields, some of them may fall into desuetude; but many will be maintained, and they will breed others.

Among the theaters of operation in World War II, those of the North American Arctic and sub-Arctic—except the Aleutians—were distinctive in that they saw no fighting whatsoever. Throughout the mainland from Alaska to Labrador, no bombs were dropped, and there was not even any proved enemy sabotage. The only injuries and deaths among all the troops and civilians employed on military projects were accidental. Thus, everything done in the name of defense in those areas remained wholly constructive; and, to whatever extent it has contributed directly or indirectly to the winning of the war, it did have bearing on future peacetime economic expansion.

Virtually all of the construction activities in northern Canada during the war were related to transportation and communications, and with good reason. Consider the facilities that existed there up to 1939. In the Yukon (207,076 square miles) there was one good-sized airport at Whitehorse, seven small landing fields, and a few hundred miles of motor roads and winter trac-



Fig. 3. The northwestward course of Canada's development. (See also Fig. 4, p. 44.)

tor trails. But in the whole of the Northwest Territories (1,309,683 square miles), plus northern Quebec and Labrador,¹ there were no airfields and only a few miles of roads. Transportation was carried on by boat and seaplane (or ski plane) and dog team. In the eastern Arctic (Hudson Bay, Hudson Strait, and the islands to the north) outposts and settlements were served mainly by one steamer making its rounds each summer. Comparatively little flying was done there, the reason being that most of the inhabitants were engaged in the fur trade, and had occa-

¹ Though belonging to Newfoundland, Labrador fitted into the pattern of Canadian defense.

sion to go and come long distances in a hurry only in dire emergencies; in such cases they were moved by especially chartered aircraft. In the western Arctic and the sub-Arctic, transportation was more varied and dependable. The reason here was twofold. Through the Mackenzie District flows the great Mackenzie River—second in length and drainage on this continent only to the Mississippi—a natural artery for boats during nearly half the year, and for seaplanes and ski planes (which can also use the countless lakes) nearly the year around. The Mackenzie District, with a comparatively benign climate, with agricultural areas and mineral resources in course of development, had a much greater population than the eastern Arctic, and well organized commercial transportation was a prerequisite.

In the early twenties the first government wireless and meteorological stations were set up in the Yukon and along the Mackenzie River, several later being placed along the Arctic coast and eastward into Hudson Strait. In the thirties these were supplemented by private stations operated by fur-traders.

Not counting the possible forays of Vikings from Iceland and Greenland to Hudson Strait and Hudson Bay, the penetration of northern Canada by Europeans began four centuries ago with Martin Frobisher's three voyages to Baffin Island in vain search for gold and a Northwest Passage to Cathay. But not until the enterprising Radisson and Groseilliers founded the Hudson's Bay Company in 1670 were permanent establishments set up. These were fur-trading posts on the west coast of Hudson Bay. Gradually the fur traders pushed into the interior. In 1771 Samuel Hearne journeyed with a band of Indians to the upper reaches of the Coppermine River and followed it to the Arctic coast at Coronation Gulf; eighteen years later Alexander Mackenzie sailed down the Mackenzie River to its delta 600 miles farther west. The nineteenth century brought a succession of British explorers looking for the Northwest Passage, and for one another. In the aggregate they plotted not only the Northwest Passage, but a good deal of northern Canada, which for a time was better known than some parts of the country farther south.

The last expedition similar in scope and magnitude to the expeditions of some of the nineteenth century explorers was that of Stefansson, 1913-1918, on which he discovered islands in the Arctic Archipelago never before seen by human beings. Henceforward exploration was conducted by small parties, filling in the gaps.

From the founding of the Hudson's Bay Company until the Klondike gold rush of '97 and '98, the only business of northern Canada, apart from whaling in Arctic waters, was the fur trade; and elsewhere than in the Yukon it thus continued until oil was struck near Fort Norman on the Mackenzie in 1920. The oil strike started a small boom that lasted a year or two. An oil source was tapped, but in those days the local market was negligible. The two biggest vessels on the river burned cordwood, and there were only a few gasoline schooners. The notion of running a pipe line to railhead was discarded as prohibitively expensive. So the several oil wells that had been drilled were capped.

But the Mackenzie River oil strike, though it brought into the North only several hundred people as against the scores of thousands of people the Klondike gold strike had attracted, was dramatic enough to direct public attention anew to the Northwest Territories. The immediate outcome was the establishing of the Northwest Territories and Yukon Branch of the Federal Department of the Interior (now incorporated in Mines and Resources), which centralized most of the legislative, scientific, and native-welfare work to be done in these regions. Between 1921 and 1931 the branch accomplished much, especially through mining laws and game conservation in the interests of the natives. Besides drafting mining and trapping regulations, it set aside large areas as game sanctuaries and preserves, and bought and imported a herd of Alaskan reindeer for the benefit of Canadian Eskimos. Strangely, though its usefulness was growing and it was facilitating the orderly development of the North, its importance was so little understood that during the depression, when federal government branches were abolished and

staffs cut during a panicky economy wave, it was among the victims. The small organization that succeeded it suffered from lack of interest and support.

Above the 60th parallel of latitude in Canada there are about 6,000 Eskimos and 5,000 Indians, the former for the most part a littoral people, the latter keeping inland in the timbered areas; and all are hunters and fishermen depending on their catch of furs for the appurtenances of civilization that they have come to regard as necessities. There is only a handful of doctors ministering to their health needs from the Yukon to Baffin Island. Virtually all hospital and educational facilities for them are in the hands of Roman Catholic and Church of England missionaries, who, with government grants, vie with each other for converts. Educational programs are elementary.

Though independent traders began to gain a foothold a generation ago, the Hudson's Bay Company has retained a strong grip on the natives, especially in the eastern Arctic. Its fur-trade policy has been consistently paternalistic.

All the northern Indians and Eskimos have long been subject to maladies unknown to them before the advent of the whites; and tuberculosis is the most prevalent. They may eventually build up resistance to this, helped by an infusion of white blood. Recently the responsibility for their medical care was given to the Department of National Health and Welfare.

The greatest single instrument introduced into the Canadian Far North to aid in the discovery of its mineral resources and to facilitate their exploitation is the airplane. In 1921 the first plane flew beyond the 60th parallel as far as Norman Wells; but not until seven years later did flying begin in earnest in the Northwest Territories. Just prior to that, however, valuable sub-Arctic flying experience was gained by the Royal Canadian Air Force, observing ice conditions in Hudson Strait during 1927-1928. In 1928-1929 two Toronto mining syndicates based a number of small planes at Chesterfield Inlet and Baker Lake, which made sorties to the west and north as far as Coronation Gulf, carrying parties of prospectors. In 1929 the first air-mail

flight down the Mackenzie to the Arctic firmly established the airplane in northern economy. That summer, reconnaissance flights were made across the Mackenzie-Yukon divide and to Great Bear Lake and the Arctic coast. The next summer, the Royal Canadian Air Force began a long-range program of serial mapping through the North which has set a high standard of precision; and that September the Northwest Territories Branch sent a party by plane to examine and photograph the area of the North Magnetic Pole.² Also in the summer of 1930, an airborne prospector discovered silver and pitchblende ore at the east end of Great Bear Lake; and that was the genesis of the richest radium and uranium mine in the world, which substantially reduced the price of radium and expedited the harnessing of atomic energy.

The opening of the silver-pitchblende mine stimulated further prospecting in its neighborhood, and the proprietors of the Norman Wells field, 300 miles to the west, soon resumed production of oil to supply a growing demand. This was heightened within the next few years, when gold was found at the North Arm of Great Slave Lake, and the town of Yellowknife sprang up at the mouth of the Yellowknife River.

The first gold brick was poured at Yellowknife in 1938. From that time forward the gold mined in that area began annually to exceed in value all the fur trapped in the whole of the Northwest Territories.

It was the airplane that made all this possible. In the course of a short season prospectors could reconnoiter vast areas, being moved from point to point by air; and whatever supplies they needed, from foodstuffs to rock drills, could be flown to them. With lakes and rivers everywhere, planes could operate on pontoons in summer and skis in winter; no place was too remote or inaccessible.

While the airplane unlocked the mineral resources of the North as never before, the tractor and bulldozer paved the way

² This was the first flight ever made to King William Island and Boothia Peninsula. The author was a member of the party.

for ground transportation and construction. By 1939 tractors, along with Diesel-powered boats, were coming into general use in the Mackenzie District. That winter a trail was blazed overland from railhead at Peace River to the south shore of Great Slave Lake; and thence, over the ice, sleds laden with freight were hauled to Yellowknife.

This, then, was the score in the development of the Canadian Far North up to 1939 and the outbreak of war. In the Yukon, the dredges and hydraulic devices which had long since replaced the gold pans of the colorful days of '98 were quietly taking out anywhere from one to five million dollars a year in gold, silver, and lead. In the Northwest Territories mining activities were concentrated in the Mackenzie District, producing in 1939 three million dollars' worth of gold, silver, radium, uranium, and petroleum. In the rest of the Territories, as well as in northern Quebec, life went on pretty much as before, the natives carrying on with their hunting, fishing, and trapping.

Development of Canada's northern regions has often been compared unfavorably with that of the Soviet Union's; but there are two conspicuous differences in circumstance. One is that all industrial progress in the Canadian North up to World War II was made by private individuals and companies on their own initiative, with their own capital, under a capitalistic—not a socialistic—regime. The other is that the Soviet Union, with a population of 190,000,000 as against Canada's twelve million, had a much more pressing need for the exploitation of all its far-flung natural resources.

But in the stress of World War II, northern Canada underwent a course of physical changes that would not otherwise have come about for perhaps another generation; and along with those physical changes came a change in the mental attitude of Canadians in general, and their government in particular, toward the North. They saw that their North was a great frontier region lying at the outskirts of Asia and Europe; that it was a crossroads for transpolar aerial commerce; that there were forces abroad in the world that would necessitate their straightway

setting about to make large-scale use of that hinterland—to occupy it and integrate it into their economy—and that if they did not they might have to surrender it to others who would.³

Canada was in the war at Britain's side in September, 1939, and at the outset was wholly preoccupied with manufacturing munitions and supplies, and recruiting and training men for overseas service; but within two years Canadians were busy constructing their first northern air bases.

In northern British Columbia, tractor trains were blazing a trail from railhead at Dawson Creek to Fort Nelson, 250 miles to the north, where an airfield was to be built; and up the Stikine River from Wrangell, Alaska, and down the Dease River to Watson Lake, just inside the Yukon border and 250 miles east of Whitehorse, came boats and barges laden with equipment and supplies for another airfield.

These were purely Canadian undertakings, under the direction of the Department of Transport. Still another, at Goose Bay, was the beginning of what was to become for a time one of the world's busiest airports, on the transatlantic ferry run to Europe. Fort Nelson and Watson Lake were steppingstones on the Northwest Staging Route from Edmonton to Whitehorse—a series of airports destined to determine the route of the Alaska Highway.

This was all before Pearl Harbor. Then the United States Army moved in and, with the consent of the Canadian Government, inaugurated a tremendous construction program. On the Atlantic side, additional fields were built at Churchill, Southampton Island, Ungava Bay, and Frobisher Bay. On the Pacific side, the Alaska Highway—taking the route already pioneered by Canadians—was pushed through to the Yukon-Alaska border, and thence tied in with the northern segment of the Richardson Highway, from Big Delta to Fairbanks. Along the Canadian portion of the route the existing northern airports—including

³ Only a few of Canada's many Arctic islands are permanently inhabited by whites or Eskimos, and the task of "occupying" some of the vacant ones has long been performed by the Royal Canadian Mounted Police, making patrols by dog team and boat.

those at Fort Nelson, Watson Lake, and Whitehorse—were expanded, and intermediate fields were created. Nearly 40 per cent of the latter were built exclusively by the Canadian Department of Transport, and a fair amount of the other work was done by Canadian contractors in combination with American contractors; and on the Alaska Highway itself, once the tote road had been pioneered by United States Army Engineer troops, the permanent road was built by Canadian as well as United States firms under United States Army and Public Roads Administration supervision.

The Alaska Highway became an all-year land route to the Yukon and Alaska and assured the maintenance of the airfields it was designed primarily to serve. It and its airfields were bulwarks of defense, and opened up hundreds of thousands of square miles of virgin country for peacetime use.

When the North Pacific was threatened by the Japanese and there was an acute shortage of tankers, the United States War Department decided to draw from the handiest local source of oil to help fuel the Alaska Highway and its airfields. This was in May, 1942, two months after the Engineer troops had begun work. The local source was Norman Wells, the most northerly tapped field on the continent. The original plan was to drill more wells, run a pipe line straight to Whitehorse and there erect a refinery. Later it encompassed a network of supplementary lines for refined products, radiating from Whitehorse to Skagway, to Watson Lake, and to Fairbanks. Whitehorse was selected as the terminus because of its central position on the highway route, and its accessibility by rail from tidewater at Skagway, as well as by boat on the Yukon River system. This was the Canol Project, which was carried out by a combination of United States construction firms working under the direction of the Corps of Engineers.

In some respects Canol was a greater task than the Alaska Highway. Whereas the latter was a straight assignment in road and airfield building, with long stretches of the road and the major airfields pioneered beforehand, the former was consider-

ably more complicated. Before they could begin laying their pipe line, the Canol contractors had to move scores of thousands of tons of freight a thousand miles and more beyond railhead. Their only supply artery at first was the Mackenzie. The number of boats and barges normally plying that river was inadequate for the tonnage to be shipped in a short time, and so a whole new fleet had to be imported. That helped, but it was not enough. Airfields were needed to accommodate big transport planes, and an overland road was needed to bring in trucks, tractors, oil-drilling equipment and other heavy freight in winter.⁴

Canol posed a tremendous problem of logistics under sub-Arctic conditions. Before they had completed their pipe line and refinery, the Army and the contractors had actually pioneered more miles of access roads than the total length of the Alaska Highway, they had created a chain of a dozen airfields, set up a 500-mile telephone line, and developed a major oil field. The oil field, incidentally, was proved capable of yielding far more oil per day than the pipe line and refinery could absorb.

Whether or not the Canol Project was wholly defensible as a military expedient for World War II,⁵ it was a prodigious contribution to the transportation and communications system of the Northwest Territories and—coupled with the Alaska Highway—the Yukon. Canol's airfields opened up the Mackenzie District to year-round operation of large aircraft on wheels (the small bush planes on skis or floats, landing on lakes and rivers, will continue in use, of course, but chiefly for local work; their disadvantages are limited range and capacity, and immobilization during the periods of freeze-up and break-up). Those air-

⁴ The establishment of a chain of airfields and a road down the Mackenzie Valley was urged at the very outset of the Canol Project by the author, who served with the contractors and the Army as northern adviser and historian

⁵ During its year of operation, between the spring of 1944 and the spring of 1945, the main pipe line from Norman Wells carried a million barrels of crude oil to the Whitehorse refinery. The previously completed supplementary lines along the Alaska Highway, at first fed by imported gasoline, fueled thousands of planes and trucks.

fields also made available a secondary low-altitude air route to Asia. Canol's roads from railhead at Peace River to Norman Wells and thence over the Mackenzie-Yukon divide to Whitehorse not only provided access to hitherto unexplored areas of hundreds of thousands of square miles, but constitute an alternative land route from railhead to the Yukon. (The Canol Road section of 520 miles from Norman Wells to its junction with the Alaska Highway eighty miles east of Whitehorse is largely of permanent construction, though at present suffering from neglect, and the Grimshaw Road section of 350 miles to Great Slave Lake is being finished as an all-weather road; only the intermediate section of 500 miles along the Mackenzie Valley remains a winter trail) The Canol Road was paralleled by a telephone line integrated with that of the Alaska Highway. Canol's drilling program at Norman Wells indicated that only one pool was actually touched—albeit its reserve was most conservatively estimated at 30,000,000 barrels—and that the whole lower Mackenzie Basin was favorable for the finding of other oil-bearing structures.

The Canol Project with all its ramifications, the Alaska Highway, and the airports in Hudson Bay, Baffin Island, northern Quebec and Labrador, all are valuable assets to Canada and, inevitably, to the United States, too, for purposes of defense and development.⁶

Undoubtedly mining will be the chief economic development in northern Canada for a long time to come. Pitchblende mining goes on at Great Bear Lake as a Government operation. (It was the Eldorado mine there that supplied the principal ingredients for the bombs that ended World War II.) Gold mining booms in the Yellowknife vicinity, the population of which had swelled to four thousand by the summer of 1947. Ample oil

⁶ In the House of Commons, Feb. 12, 1947, Prime Minister W. L. Mackenzie King announced peacetime continuation of defense collaboration with the United States, and made a statement of policy regarding northern Canada: "As the Government views it, our primary objective should be to expand our knowledge of the North and of the conditions necessary for life and work there with the object of developing its resources."

can be produced at Norman Wells to supply all the immediate needs of the Mackenzie District. Water power is plentiful in a number of localities in the Northwest Territories, though it has been harnessed only at Yellowknife. (It has long been used by mining companies in the Dawson and Mayo districts of the Yukon.) Numerous already located mineral deposits, including copper, lead, zinc, tungsten, iron, coal, and oil, will be made more accessible by war-built roads and airfields.

Plans were recently made for the construction of a railroad from the Gulf of St. Lawrence through northern Quebec and the interior of Labrador to the headwaters of the George, Whale, and Swampy rivers.⁷ Possibly extended clear through to Ungava Bay, and incidentally tapping vast pulpwood forests, this railroad would open up a major source of rich iron ore said to be comparable in quality and quantity to that of Minnesota's Mesabi Range. Large sums have already been spent in exploration and drilling in the area. Power for the development could come from near-by Grand Falls, on the Hamilton River, higher than Niagara. Other known iron deposits in northern Canada include those of the Belcher Islands, in Hudson Bay, readily accessible by ship.

Copper has been found on the northwestern coast of Hudson Bay, south of Coronation Gulf, in Victoria Island, and along the Canol Road among the Mackenzie Mountains. Around Great Bear and Great Slave lakes prospecting has been carried on intensively since 1929, revealing deposits of lead, zinc, copper, tin, tungsten, tantalum, beryllium, molybdenite, coal and iron, as well as gold, silver, and radium. Comparatively little is known of the geology of the Arctic Archipelago although many years ago both graphite and mica were mined in southern Baffin Island; and in Banks Island and northern Baffin Island small-scale coal mining has been carried on for subsistence purposes by

⁷ This discussion has dealt principally with the Arctic and sub-Arctic portions of Canada, within the Yukon and Northwest Territories, most of the southern boundary of which is the 60th parallel of latitude. Nearly all of Quebec is south of that parallel, along with Labrador, but it becomes sub-Arctic in character not far beyond the 50th

explorers. Stefansson used coal in Melville and other more northerly islands. Platinum, nickel, and silver have been reported from Admiralty Inlet, Baffin Island.

There is also a fishing industry to be developed: a start has been made on Great Slave Lake, with several varieties of fish quick-frozen for export.

While small-scale agriculture and stock raising have been carried on in the Mackenzie Valley and the Yukon for generations, scientific methods have yet to be applied to an appreciable extent. (The first dairy farm in the North American Arctic was run a few years ago by a Canadian Government medical officer at Aklavik, on his own, and attracted wide attention and admiration; but upon his retirement it was allowed to expire.) With the study of soil and climatic conditions and the evolution of hardy varieties of cereals and vegetables and livestock—not neglecting northern animals like reindeer and musk oxen—a large part of the Territories may be made to support an increasing population.

Stimulated by the exigencies of the last war and suddenly aware of the vulnerability of their northern frontier in an age of atomic bombs and long-range aircraft and guided missiles, Canadians have begun to take steps to consolidate their position in the Arctic and sub-Arctic. The first official gesture in this direction after the war was "Exercise Musk Ox"—a trek of Army snowmobiles from Churchill⁸ via Baker Lake and Coronation Gulf and Great Bear Lake to the Alaska Highway during the late winter and spring of 1946—the last few hundred miles being over Canol-pioneered roads. In concert with United States authorities, the Canadian Government began in 1947 establishing loran radar stations as well as additional meteorological stations both on the northern mainland and among the Arctic islands, and the Royal Canadian Air Force intensified its

⁸ About seventy-five miles south of the 60th parallel, and terminus of the Hudson Bay Railway, the port of Churchill has a sub-Arctic climate, making it a convenient place for cold-weather tests of men and equipment conducted by Canadian Army units.

photographic operations for the production of more detailed maps.

In all of the defense and development projects through the Canadian Far North, the Indians and Eskimos have played only bit parts—sporadically as guides or casual helpers—for no provision was ever made to train them and employ their special aptitudes to wider advantage. For the most part the natives rest exclusively within the sphere of influence of the traders and missionaries, without much attention being paid to their potential value as logical human keystones in the foundation of northern research and development. The Soviets in the Arctic phases of their Five Year Plans have stressed the full utilization of the talents of aboriginal tribes. In the Canadian sector of the Arctic, the Eskimos—whose mechanical bent has already been demonstrated in their handling of motor schooners and other equipment—can be taught to man weather stations, and to service and drive tractors, snowmobiles, and airplanes. Cheerful and intelligent people, masters of their environment, they deserve a chance to broaden their intellectual horizon, which would pay dividends to the whole country.

Thousands of soldiers and civilians learned through the war years while constructing new transportation and communications systems in northern Canada that with the facilities of modern science at their command they could live and work there as comfortably as anywhere else. Prejudice against the Arctic, long supported by ignorance, dies hard; but at last it is withering in the light of education and practical experience, and Canadians must move northward to achieve maximum strength and prosperity.

3

CANADA: POWER VACUUM, OR PIVOT AREA?

By J. W. WATSON

If Canada was once at the margin of affairs, it is now at the center. As long as Western Europe and the Far East were the critical areas in world politics, Canada did not have much to say. But when the power balance swung between U.S.S.R. and the United States, Canada's position became vital. This is a new situation, and it finds Canada gravely unprepared. Heretofore, it has enjoyed British and American protection. The British Empire secured its east-west approaches; the Monroe Doctrine, its southern ones. *The north was not considered.* Even as late as 1940, a noted writer on Canadian defense ignored the Arctic, and confined his attention to the Pacific and Atlantic coasts and to the American frontier.¹ Today that would be inconceivable.

The Arctic may become to the future what the Mediterranean was to the past—the axis of world power. The grouping of Japan, China (Manchuria), Siberia and Russia, the Baltic lands, Britain, Canada, and the United States (Alaska) around the north has created a new arrangement of Powers, with significantly different contacts. This is the new strategic center of the world. It is the new Pivot Area, which has made the old Heartland eccentric.

We live in a longitudinal world, and not, as in the past, in a

¹ C. P. Stacey, *The Military Problems of Canada* (Toronto, 1940), p. 1.

J. WREFORD WATSON, born in Shensi, China. Ph D., Toronto, 1945. Associate Professor, Head of Department of Geography, McMaster University. His publications deal mainly with problems of Canada's geography.

latitudinal one. Yet Canadians have been concerned for so long with an east-west geography that they find it difficult to adjust themselves to a northern alignment. Throughout most of their history they have relied on the east-west forces of Empire as a counterpull against the strong southern tug of the States. By keeping the east-west line intact, they kept Canada intact.

Consequently, Canadians turned to Britain for help. In contrast to Americans who found their identity in turning away from Europe, Canadians discovered it in preserving their European ties. As Professor Trotter puts it, "Overseas connections have not been deemed by Canadians inconsistent with national existence and liberty, but rather the condition making possible their survival and growth."² Lord Tweedsmuir was even more emphatic and claimed that Canada's role was to weave the warp of Europe into the weft of America. "Canada has a specific contribution of her own to make to North American civilization. I like to think of her, with her English and French peoples, as in a special degree the guardian of the great Mediterranean tradition which descends from Greece and Rome, and which she has to mould to the uses of a new world."³

From the outset, the contrast between the United States and Canadian interpretations of their geography became sharp. Because the United States forswore its old connections, it turned in upon itself, and subsequently found a manifest destiny in New World expansion. In the great drive to the Pacific it also drove to north and south, against Canada and Mexico. Thus, while the major United States axis was latitudinal, there was an important north-south component as well. After reaching the Pacific, the country found the north-south factor more important than ever. It expressed itself dramatically in the Civil War. Actually, the grain of the country is longitudinal. "If civilization had first dawned in the Americas, it is reasonable to believe that it would have conformed to Nature's setup of longitudinal lines of de-

² R. G. Trotter, "North America and the War," *Queen's Quarterly*, Summer, 1940, p. 135

³ Quoted in Lorne Pierce, *A Canadian People* (Toronto, 1945).

velopment." Yet because the major topographical trends are longitudinal, that does not necessarily mean the latitudinal frontiers will disappear. Many Americans assume that they are geographically anomalous⁴ The implication is that they will give way before the natural integration of Canada with the United States. Canadians have always disagreed, and have looked with reserve, if not suspicion, at signs of Americanism such as the Monroe Doctrine and the Pan-American Union.

Canadian history has therefore primarily been concerned with discovering and maintaining an east-west geography. This was the aim of Confederation, which hoped to overcome the north-south trends linking the Maritimes to New England, Ontario to Ohio, the Prairies to the American West, and British Columbia to the Pacific states, by drawing the colonies together into a transcontinental Dominion. The nation thus came to act as a countercheck to sectional secession. The latitudinal features in Canadian geography, such as the St. Lawrence, the North Shore of the Great Lakes, the Saskatchewan and Qu'Appelle, the Thompson, Fraser, and Skeena rivers, were reenforced by an east-west political organization and strengthened by economic forces channeled to Britain by west-east railways and canals.

The struggle between the latitudinal and longitudinal components in Canadian political geography focused attention on the southern frontier. The War of 1812 showed how vulnerable was the St. Lawrence and Great Lakes line. The capital was withdrawn to Ottawa. The challenge to the Red River community showed how isolated Winnipeg was from metropolitan Canada, and how exposed to the United States. The inhospitable Laurentian Shield crowded Canada to the south and separated east from west. Canada had no heartland into which to withdraw, and from which to direct the united effort of the country. The southern frontier, in the last resort, was impossible of defense. Therefore it was fortunate that, in each dispute with the United States, Canada lost more and more of her dangerous salients and, by accepting a straightened border, decreased fric-

⁴ J. Russell Smith, *North America* (New York, 1925), p. 33.

tion between the two countries. Actually the straightening out emphasized the Fraser, Saskatchewan, North Shore, Ottawa, and St. Lawrence Gulf line, and helped Canada to identify itself *a mari usque ad mare*. Indeed, as Dr. Patterson Smith has pointed out, it was because Americans took the position that the absorption of British North America was an inevitability which time would consummate, they begot a sense of nationality in Canada that ultimately destroyed any notion of union.⁵

Canada and the United States agreed on an undefended border. This let Canada turn its attention to the Atlantic and Pacific frontiers. These were manned by the British. As long as there had been danger of the United States outflanking them, the Canadians were glad of British protection. During the "Russian Scare" of 1877-1885, they welcomed the establishment of a British naval base at Esquimalt, British Columbia. Yet when danger was over, they resented the maintenance of British power on the continent. This was particularly so at the end of the nineteenth century. In 1885, Sir John A. Macdonald expressed the new spirit of the country when he resisted pressure to send troops to the Sudan, "to get Gladstone and Coy out of the hole they have plunged themselves into by their own imbecility." Canadians were even more critical when Joseph Chamberlain later proposed some form of collective empire policy. This might have given Canada more say in affairs, but it might have involved the country in overseas struggles and subordinated Canadian bases to British strategic requirements. Laurier opposed the idea.⁶ Instead, he suggested a policy of qualified commitment. "Whilst I cannot admit that Canada should take part in all the wars of Great Britain, neither am I prepared to say that she should not take part in any war at all. *I am prepared to look upon each case upon its merits as it arises.*"⁷ Canada would take over British responsibilities in British North America,

⁵ J P Smith, "A United States of America," *Canadian Historical Review*, June, 1945, p. 110.

⁶ R A MacKay and E. B. Rogers, *Canada Looks Abroad* (Toronto, 1938), p. 77.

⁷ *Canada, House of Commons Debates*, 1900, column 68.

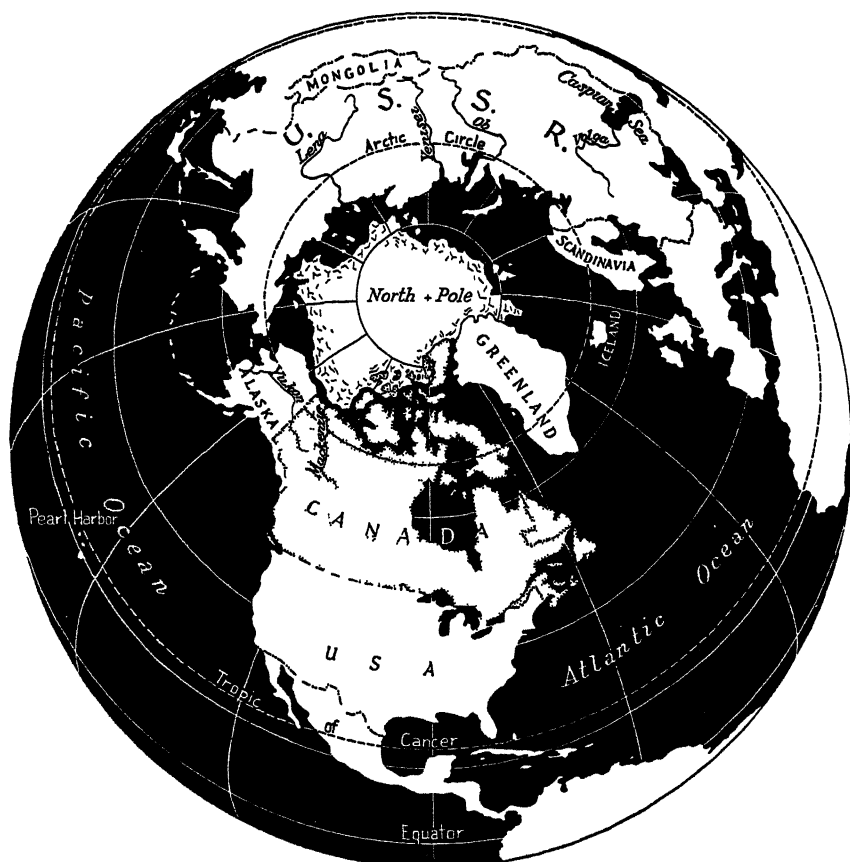


Fig. 4. Canada, flanked by Alaska and Greenland, faces the Eurasian landmass.

but would not extend its east-west connections overseas. A Canadian fleet was to man the Halifax and Esquimalt bases, and it was accepted that, *in the event of Canadian participation in war*, it would operate under Imperial command—but for the duration of the war only.⁸

In other words, even if Canada stressed the east-west forces

⁸B Keith, *Selected Speeches and Documents on British Colonial Policy, 1763-1917* (London, 1918), Vol II, p. 357

within the Dominion as a counterpull against the southward pull of the United States, it resisted, at the same time, any extension of the east-west axis to Britain and the Empire. Its chief concern lay with integrating itself within its own borders. It was not prepared for collective responsibility in Imperial defenses. It developed a policy of noninvolvement in any bloc or blocs, whether British or American.

Therefore, measures were pressed forward to cut formal connections with Britain. British Regulars were replaced by Canadian militiamen, British officers by Canadian graduates of the Royal Military College. (This was established at Kingston, near the center of the country and remote from British contacts.) In 1905 Lord Dundonald was withdrawn as the last British Commander-in-Chief.⁹ Britain's foremost naval base in the Western Hemisphere—Halifax—became Canadian in 1910. Esquimalt was taken over in 1911. Canada was well on its way to independence when World War I found it fighting again at Britain's side.

The grave crisis of 1917 called forth the Imperial War Cabinet, an idea of Lloyd George's to pool brains as well as resources. The Dominion Prime Ministers sat with the British Premier and his colleagues in collective direction of empire policy. Yet the idea was abandoned after the war. Canada continued to press for independent action. It signed the peace treaties as a separate state, and as such it reinterpreted its geography. Canadians foresaw that mere separateness was not enough. In the end, their country could neither pull against American longitudinal attraction, nor cut off the latitudinal ties with Britain. A better future would lie in bringing the countries together in such a way that, meeting in Canada, they would immeasurably strengthen it. Therefore, in the twenties, Canada made decisions which had the effect of uniting its former geographies into a new geopolitical destiny. It tried to act as an apex of a great Atlantic Triangle which would bring Britain and

⁹ H. M. Clokie, *Canadian Government and Politics* (Toronto, 1944), p. 187.

North America together in a new relationship. Mr. Mackenzie King refers repeatedly to "the very special role which Canada has to play in the promotion of Anglo-American friendship. Canada more than ever before will become the linchpin of Anglo-American relations."¹⁰

Probably the first intimation of this was the crisis of 1921, when the Anglo-Japanese Alliance came up for renewal. This alliance could have been regarded as the culmination of the east-west axis in Canadian geography, linking Britain and Japan at the extremities of a line which passed directly through Canada. However, the Canadian government became convinced that the treaty was highly prejudicial to good relations with the United States, where it was feared that the alliance might operate against the United States.¹¹ The Canadian Prime Minister therefore vigorously opposed the renewal of the alliance and it was given up. Thus Canada prejudiced its east-west alignment, with bastions in both the Atlantic and Pacific for its protection, for its southerly connection. Britain considered the Canadian protest enough to abandon its concept of a two-ocean balance of power in favor of the Atlantic Triangle. The Pacific could be left to the United States.

In 1922 came another test of imperial control. British troops were involved in the war between Greece and Turkey. Britain asked for Dominion aid. New Zealand at once prepared to help. Australia declared it would, but sought ratification by Parliament. Canada refused to commit itself, until Parliament had met to discuss the matter. The British claimed that, since Canada had signed the Treaty of Trèves, it was to that extent involved, and should share in the Commonwealth's responsibility in the International Zone at the Dardanelles. In other words, Canada should not expect rights (as an independent Dominion) without accepting duties (as a responsible state). The result was

¹⁰ Quoted in F. R. Scott, *Canada and the United States* (Boston, 1941), p. 63.

¹¹ J. B. Brebner, "Canada, the Anglo-Japanese Alliance and the Washington Conference," *Political Science Quarterly*, Mar., 1935, p. 45.

Canadian withdrawal from imperial participation in international affairs. When the Locarno Treaty was drawn up, reservations were made that no obligations were imposed on any British Dominion. Finally, in 1931, by the Statute of Westminster, Canada was given the right to decide for itself whether it would come to the defense of Britain or not.

As long as the main strategic considerations were latitudinal, Canada could afford to take such an independent attitude. Britain would defend it in the Atlantic, and the United States in the Pacific. However, if strategic considerations were to shift to longitudinal lines, then the situation would be different. Canada could no longer count on outer British bastions, or on the protection of Britain's seven-sea fleet. There are no northern bulwarks; there is no Arctic fleet. Consequently, Canada faces a new set of circumstances, which is bound to influence its future policy. Can it continue its main role as a pivot of Anglo-American relationships? Or will it become a power vacuum to be filled in by the United States or U.S.S.R.?

One thing is certain: it cannot trust to nationalism and a policy of noninvolvement. Canada would find it extremely difficult to defend its northern approaches, especially because its population, industries, and defense establishments are on the southern edge of the country. The need for coal and iron, for American supplies and the American market, has kept Canada to the south. Climate and soil further emphasized the advantages of the southern frontier. Yet the north will undoubtedly grow in importance; and in its northland Canada has great stores of wealth. Indeed it is quite conceivable that Canada may be the chief source of power for the future North America. Wallace E. Pratt, a leading oil geologist, has said: "Well-considered estimates place the volume of the oil-equivalent of the Athabaska tar sands at from 100 to 250 billion barrels; yet the total discoveries of all time all over the earth do not exceed 81 billion barrels. Eventually they may well come to be looked upon as one of the important energy sources of North Amer-

ica.”¹² The uranium of the Great Bear Lake has already become the chief source of atomic energy for the continent.

Can the United States allow these resources to go unprotected? Can she afford to let a small country like Canada defend them alone or, for that matter, develop them alone? The huge northland is an empty vacuum tempting exploitation. Air lines southward across the Prairies and the Shield connect it with the States. Air lines northward across the Arctic connect it with Europe and Siberia. Canada is brought into a new north-south alignment in which her relationships with foreign countries are direct and individual, and no longer are made through Britain as a third party.

Therefore Canada cannot look to a revival of imperial connections for future security. It must look southward. At last, its continental geography is more important than the oceanic. Canada and the United States have become integrated, and this is a way in which Canada is no more dependent on the States than the States are on Canada. America's conception of hemispherical defense until recently has hinged on the Panama Canal. Yet the situation might arise in which the Panama Canal would be only tributary to the Arctic defense line. As long as one lived in terms of a Western and an Eastern Hemisphere, bases like Hawaii and Bermuda and the Panama defenses were vital. They still are, in a subsidiary way; yet with a strong outpost in Britain on the east, and occupied Japan on the west, North America has little to fear. But in the northern hemisphere it is now imperiled by a weak Canada. Canada has been a pivot in strengthening America's position both in the Atlantic and in the Pacific; but its empty and unguarded north forms a dangerous power-vacuum that may invite intervention. It would be to the advantage of the United States to intervene first.

Thus there is a new thrust from the south in Canadian affairs. Fortunately, the relations between Canada and the United States have been so close for so long that this thrust is not regarded

¹² Wallace E. Pratt, *Oil in the Earth* (Lawrence, Kans., 1942), pp. 44-45.

with hostility. Canada, which was at first opposed to the States, and then suspicious of them, now seeks their cooperation. After all, as Lorne Pierce insists, "Canada is committed to an American way of life, an American brand of democracy, and an American outlook."¹³ It has followed the American lead for the last generation.

This was clearly shown in 1923 during negotiations for a Pacific halibut treaty. Canada and the United States came to a common agreement; but before they could sign Britain insisted on the right to countersign. The Dominion protested that it could enter into regional contracts of this sort on its own, and that British participation in Canadian-American affairs was in no way necessary.¹⁴ Since then Canadian policy has continued to make bilateral agreements with either the United States or Britain, when they are in its own interests; nor does this annul its over-all policy of Anglo-American consolidation. Yet in the event of a difference between the United States and Britain, Canada is more likely to follow the United States. For example, during the Manchurian affair, Canada stood out with America for noninvolvement¹⁵ although Britain was working for collective commitments against Japan. But when the United States, the chief Pacific Power, could not afford to intervene¹⁶ it would have been foolhardy for Canada to do so. Canada's long and poorly defended Pacific coast might have invited Japanese reprisals—which the British could hardly have warded away. Later in economic matters Canada modified the Ottawa Agreement, which tended to shut the United States out of its markets in favor of Britain, and in 1935 made a special agreement with the United States.¹⁷

It should be remembered, however, that, in giving concessions to the United States, Canada is involving the States in Common-

¹³ Lorne Pierce, *op cit*, p. 67.

¹⁴ A. J. Toynbee, *The Conduct of British Empire Foreign Relations Since the Peace Settlement* (London, 1928), p. 101.

¹⁵ *League of Nations Official Journal*, Special Supp. No. 111, pp. 57-59.

¹⁶ Varian Fry, *War in China* (New York, 1938), pp. 51 ff.

¹⁷ R. A. MacKay and E. B. Rogers, *op. cit.*, pp. 136-137.

wealth affairs, just as much as it is committing itself to American policies. Thus, in the end, closer Canadian-American relations are bound to bring the Commonwealth closer into touch with the Western Hemisphere. It is a matter of opinion whether or not they involved the United States in the defense of Britain in World War II.

Actually, Washington did not wait for Canadian activity to implicate itself in Commonwealth affairs. In 1938 President Roosevelt made a unilateral promise to Canada. "I give you assurance," he said, "that the people of the United States will not stand idly by if domination of Canadian soil is threatened." At the same time he linked Canada with "the sisterhood of the British Empire." By implication, therefore, he promised support of the Commonwealth. For he saw well enough that, should Canada fall, America would be endangered. And of course, if Britain fell, Canada would be threatened. Thus Roosevelt involved the United States in any war in which Canada became involved—even if it were through association with the British Empire.

The culmination of the Roosevelt policy came with the Ogdensburg Agreement of August 17, 1940, which stated: "The Prime Minister and the President have discussed the mutual problems of defense in relation to the safety of Canada and the United States. It has been agreed that a Permanent Joint Board on Defense shall be set up at once by the two countries. It will consider in the broad sense *the defense of the north half of the Western Hemisphere.*"

The agreement was hailed by both nations. J. B. Brebner describes Ogdensburg as a turning point in Canadian-American relations and remarks: "Canadian achievements and preparations, in army, air force, and war industry, have provided the United States with an unexpectedly effective defense of her supposedly undefended long northern boundary."¹⁸

The new interest in the Arctic is significant. Canada is vulner-

¹⁸ J. B. Brebner, "Ogdensburg: A Turn in Canadian-American Relations," *Inter-American Quarterly* (Oct., 1940).

able in no place more than in the north. Canada is still backward in developing northern military establishments. This is not surprising, since Canada's main concern in geopolitical development has been with the south or with east and west. But that has changed. Even the east-west attachments have their northern components. The shortest Atlantic crossings to Britain are in the north. The desperate plight of Britain after the invasion of Norway and the fall of France might have given Germany a chance to launch her submarine and surface fleets across the north, take Spitsbergen, Iceland, Greenland, and Newfoundland, and threaten Canada. At the very least German ships could harass northern convoys, mine northern waters, bombard the northeastern shores, and perhaps send fleet-based bombers to devastate Montreal or Toronto. As for the Pacific, a truculent Japan could have sent its fleets to capture the Aleutians, harass the British Columbia coast, and cripple Vancouver. These were all possibilities. Events nearly proved them actualities. The need for Labrador, Alaska, and Hudson Bay defenses became more than academic. Also they became more than a Canadian need. They were an American necessity. Therefore we may say that America's first act in defending itself in terms of new Arctic geography was the Ogdensburg Agreement.

However, the United States was not satisfied with that, but secured from Britain additional bases in Newfoundland and Bermuda to protect its North Atlantic approaches. At the same time it strengthened its Pacific defenses. The story thereafter was one of close cooperation between the three powers concerned in which, as events served to show, Canada formed the "linchpin" of Anglo-American security. In fact, it linked not only Western Europe to America, but also the Far East. It became the point of contact of two great triangles of power, one in the North Atlantic and one in the North Pacific.

The Canadian side of the American, Canadian, and Western European triangle was represented by the Atlantic Air Ferry and the Atlantic Convoy, both of which used Canadian or Canadian-leased bases such as Montreal, Moncton, Goose Bay, and Halifax.

The Canadian Navy supplied 48 per cent of the convoy escort in the North Atlantic, and the RCAF accepted responsibility for the air protection of the Western Atlantic.¹⁹ Washington strengthened this by the acquisition of a naval and air base in Newfoundland; by an agreement with Denmark for bases in Greenland "for purposes connected with the common defense of the Western Hemisphere"; by the establishment of weather stations in Greenland and Arctic Canada. The Anglo-American occupation of Iceland further reenforced the Atlantic Triangle. Of course, since the conclusion of the war there has been a withdrawal from Iceland. To offset this, the Canadian navy has been enlarged, and its largest unit, the carrier *Magnificent*, will be stationed at Halifax. Such an arrangement should help to keep the northern approaches from the Arctic, by way of the Denmark or Davis Strait.

Meanwhile a Pacific Triangle has been built. It is almost wholly American with its base extending from San Francisco to Tokyo and its two sides reaching an apex in Alaska. However, Canada helps to strengthen one of these sides in the North Pacific. The Alaska Highway was built from Edmonton to Fairbanks, over which supplies were sent to American military establishments in Alaska. The Canadians and Americans also used a string of air bases connecting Alaska and the central industrial States. Canadians expressed their growing interest in the North Pacific by establishing a new naval college at Royal Roads, British Columbia, setting up a northern air command at Edmonton, and accelerating the development of the then existing Norman oil field in the Mackenzie valley which supplied the trucks using the Alaska Highway, and the aircraft on the Alaska airway. They also sent a token force to the Aleutians and, jointly with the United States, occupied the air and naval base of Kiska Island.

During World War II, the chief interest in the north was directed towards Labrador and Atlantic connections, or Alaska and Pacific ones. The Arctic itself was not given a great deal of

¹⁹ *Canada Year Book*, 1943-1944, pp. xxxiii-xxxiv

consideration. Across its waters lay the friendly state of the U.S.S.R. Nevertheless, attention is now focused on the region, which is the only undefended part of the continent. In spite of the fact that it is the obvious duty of the Joint Defense Board to discuss the defense of this region, Russians have made violent objections to Canadian-American "expansion" into the Arctic. "The United States Arctic policy, which is turning the Polar

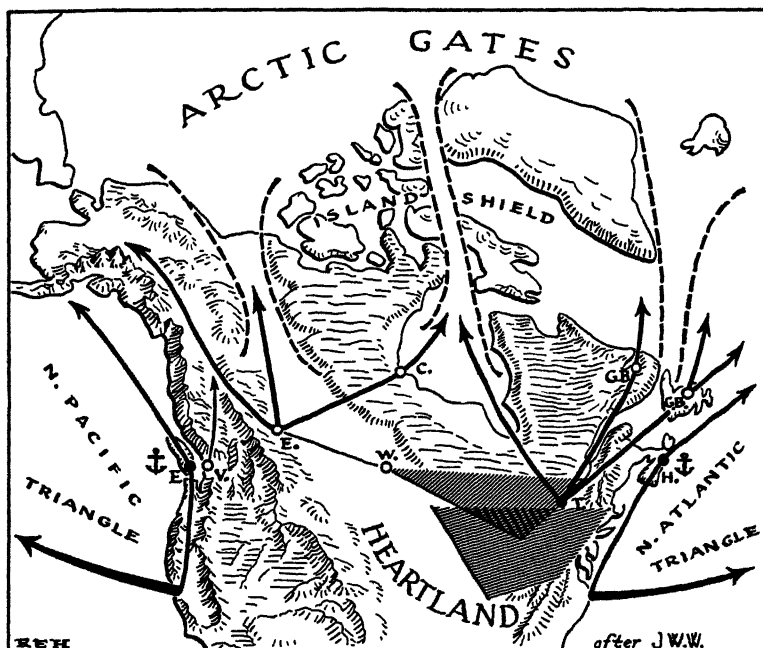


Fig. 5. The defense of North America.

regions into an arena for imperialist scheming, represents the aspirations of the most aggressive groups of the financial oligarchy, those which are striving for world dominion.”²⁰ The Kremlin claims that there is an iron fist hidden in the defense

²⁰ I. Yermashev, "U.S. Polar Expansion," *New Times* (Soviet), No. 7, 1947, p. 14.

pact.²¹ It points out that in the summer of 1946 Washington put considerable pressure on Canada to build United States observation posts and weather stations in the Canadian archipelago; that a joint United States and Canadian base was set up at Churchill, on Hudson Bay; that Canada was reorganizing its air command to give the north greater attention; and that Canada and the United States were sharing information on experiments made by land and sea on Arctic maneuvers, such as Exercise Musk Ox.

Criticism became quite open in February, 1947. In that month Prime Minister King announced an agreement with the United States to provide for the standardization of equipment and weapons, the integration of military training, the sharing of military facilities and the continued organization of joint defense. *Izvestia* declared (February 18) that Canada was "turning over territory and her army to the United States in preparation for aggression."²² Mackenzie King described the agreement as "a contribution towards stabilizing peace and the establishment through the United Nations of an effective system of security."

The two points of view are interesting. Russia considers the agreement as a threat to internationalism; Canada looks on it as a contribution towards great international stability through regional security. Probably much more is being made of the situation by Russia than it deserves. The Canadian Minister of National Defense said on February 18, 1947, that Russian protests about Churchill were preposterous; it is not a B39 base, but "an experimental station for the joint services, for year round testing of service equipment in topographical and climatic conditions representative of northern Canada. The personnel . . . will be test teams, and observers from Canadian services and the United States Army . . . who will observe and take part in the work there *under the administration of the Canadian camp com-*

²¹ Associated Press dispatch, Feb 18, 1947, Hamilton, Ont, *Spectator*, p. 1.

²² *Ibid.*, p. 10.

mandant."²³ Canada is not giving territory to the United States or putting its forces under United States command.

Nevertheless, Canada is regrouping its own forces. Obviously satisfied that the Atlantic and Pacific triangles protect its flanks, Canada is concentrating on the central and northern parts which have heretofore been less important. On February 21, 1947, the Defense Minister announced that the R.C.A.F. was to concentrate its future development under two chief commands, one at Trenton, Ontario, and the other at Edmonton, Alberta. The commands at Halifax, Winnipeg, and Vancouver will disappear or be cut down. "Edmonton now, both from the standpoint of air and land defense, becomes probably the most strategic spot on the Canadian mainland."²⁴

This entire reorganization has no doubt proceeded under the auspices of the United States and Canadian Permanent Defense Board. At any rate, the new shift in command answers criticism that North America is "wide open at the top." This criticism has recently been voiced by General Spaatz, the current Chief of the Army Air Forces. "Through the Arctic," General Spaatz remarks, "every industrialized country is within reach of our 'strategic air.' America is similarly exposed. We are, in fact, wide open at the top."²⁵ In an article entitled "Northern Rampart," Spaatz claims, "Whoever controls the Arctic air lanes controls the world today."²⁶ Therefore, Canada's position is pivotal. The use of that position will very largely depend on the degree of development of the northland, and on concepts of its defense. These are still matters of conjecture. As Stefansson remarks, "The problems of the North have never been understood, for they are not of the past but of the future."²⁷ Several

²³ "Soviet on Churchill," Ottawa report, *Toronto Star*, Feb. 18, 1947, p. 1.

²⁴ *Hamilton Spectator*, Feb. 22, 1947, p. 19.

²⁵ Article on polar strategy, *Boston Herald*, *New York Times* dispatch, Feb. 12, 1947.

²⁶ C. Spaatz, "Northern Rampart," *New York Herald Tribune*, Oct. 27, 1946.

²⁷ Vilhjalmur Stefansson, *The Northward Course of Empire* (New York, 1922).

surveys have been conducted into the possibilities of northern settlement, notably the "Arctic Survey" by the Canadian Social Research Council and the Clay Belt survey of the Department of Mines and Resources. Some accomplishments may already be listed. The agricultural settlement of northerly districts such as Lake St. John, the Great Clay Belt and Peace River is significant. The building of railways northward to Whitehorse, McMurray, Churchill and Moosonee; the opening of mines in Rouyn-Noranda, Kirkland Lake, Flin Flon, and Great Bear Lake; the establishment of hydroelectric power plants on the Yukon, Churchill, Moose, Ottawa, and Saguenay rivers—all these are indications of Canada's march to the north. Yet there is still an immense area of empty undeveloped land.

This renders the problem of defense acute. Fortunately, the difficulty of the terrain makes a land approach unfeasible, while the short ice-free season makes a naval attack unlikely. The danger would obviously come from the air. If so, it might develop from Alaska, as General Mitchell forecast on February 13, 1935, when he made the startling statement, "He who holds Alaska will hold the world." Note that by direct flight from Fairbanks to Chicago a plane would pass over Winnipeg; from Fairbanks to New York it would pass near Churchill. These advanced Canadian bases, coordinated under the new Edmonton Command, would help protect the North American heartland. Or again, the danger might approach from the direction of Labrador. In that case, Goose Bay, Labrador, and Gander, Newfoundland, coordinated under the Trenton Command, would protect New York or Chicago from the northeast.

The possible federation of Newfoundland with Canada, now under discussion, will mean the further extension of Canadian influence and responsibility in the north. At the same time it will mean the further withdrawal of direct British influence. When Newfoundland came under commission government, it reverted to the status of a crown colony, the defense of which was a British responsibility. If it should enter the Canadian fed-

eration, the Canadian government will assume new responsibilities for the defense of Newfoundland.

A further British withdrawal from the Western Hemisphere might be still another reason for Britain to follow a course of neutrality in any conflict involving that hemisphere. The additional responsibility undertaken by Canada will increase its involvement in Western Hemisphere affairs. For Newfoundland is the site of United States bases, and is therefore necessarily involved in United States affairs.

The problem raised by the inclusion of Newfoundland in Canada is not one of Canadian participation in Western Hemisphere policies; that is already conceded under the defense agreement with the United States. The problem is one of the degree of Canadian commitment. Under the terms of that agreement, Canadian sovereignty was not to be infringed upon. However, the Newfoundland bases were leased to the United States by Great Britain, for ninety-nine years, with surrender of sovereignty. Consequently Canada is in the strange position of having an agreement that protects sovereignty in nine provinces, and yet of taking over a tenth province in which it does not possess full sovereignty. However, as Mr. St. Laurent said, in announcing the terms offered by Canada to Newfoundland, it is hoped that "there might be some modification of the agreement, if and when Newfoundland enters confederation." Without such modification, Canada would be automatically involved in any violation of United States sovereignty in Newfoundland. On the whole, it would seem that the entry of Newfoundland into confederation would bring Canada and the United States into still closer affiliation.

The approach from the immediate north could be made only over Greenland, the Canadian Archipelago, or the Arctic Sea. Observation posts and outer defenses would be very useful here, but it would be difficult to maintain any large establishments so far from ports and railheads. Probably the deeper defenses lying between Edmonton and Trenton would be relied on. They could

forestall any real threat to the manufacturing belt between Montreal, Chicago, and Philadelphia.

Nevertheless, it was announced in May, 1947, that nine joint bases would be established in the Arctic by the United States and Canada. While these are primarily weather and observation stations and civil air bases, they could easily be fitted out for military purposes. Canada has involved itself deeply in the protection of America.

Whatever the threat, Canada's defenses would play a vital role in warding it off. That is the importance of Canada to the continent. Canada is the pivot of the north. Yet it would be unwise for Canada to let this situation place it in a struggle for the balance of power. Every nation naturally looks for allies to help strengthen its position. But Canada cannot afford to trust to regional strength as a substitute for international security; of all the nations it has most to gain from the collective system and most to lose from the bilateral one.

However, recent events have not allowed Canada to confine itself to United Nations protection, or even policy. Two things of considerable importance are happening: it is being withdrawn from the Commonwealth sphere, and implicated in the American. Thus Canada's historic policy of noninvolvement in any bloc or blocs is in danger. Canadians have pursued the goal of independence for a long time, but overnight find themselves a colony of the United States. Apparently, whether they will it or not, they are involved in the Western Hemisphere Defense Pact agreed to by all other western hemisphere countries at the Petropolis Conference in the summer of 1947. This pact includes both Canada and Greenland within the defense area of the western hemisphere.

It seems on the surface absurd that Canada should object to being defended by all other western Powers in the event of being threatened. Yet there is another factor than western hemisphere solidarity. There is also Commonwealth solidarity. And Canada's present role could quite conceivably threaten this. For the fact is, if Canada must leap to the defense of America in any

war in the West, the Commonwealth would feel morally obliged to support her. Thus Canada has involved the Commonwealth in any war in which America becomes involved. In effect, by not protesting the Petropolis Pact, Canada has offered the British Empire on a platter to America. She has replied to the Kingston speech of Roosevelt and promised the people of the United States that the Commonwealth will not stand idly by if domination of American soil is threatened.

At least that would seem to be the situation to those who have always considered the Commonwealth indivisible. Yet would the other nations of the Commonwealth come to Canada's aid, if it were caught up in an American war? The matter is debatable. Eire could preserve its neutrality in that event, just as it did in World War II. And if Eire could the other commonwealths might do so as well. Indeed, Britain might do so. It is significant to recall in this connection the terms of the Anglo-Soviet Treaty of Friendship. According to this treaty, either Power would remain neutral where the other became involved in war with a third Power. If it were ever to happen that Russia went to war with the United States, Canada would be drawn in, both by the Ogdensburg Agreement and by the Petropolis Pact. Yet *Britain would be bound, by terms of the Anglo-Soviet treaty, to remain neutral.*

If the world divides itself into two great camps, could Canada stay neutral? The only hope for Canada would appear if a permanent division of the world into Power blocs can still be avoided.

Canadians cannot restrict themselves to regionalism, because their geography impinges on that of Britain, America, China, and the U.S.S.R. If Canada should get from under Britain only to come under domination of the United States, it would not have advanced its security. It would simply have replaced involvement in east or west, by involvement in the north. But in the present situation, as Gwen Carter points out: "Regionalism even around an Anglo-American nucleus would force Canada back. Canada is too close to the Soviet Union to view with comfort a

position between two rigidly demarcated power units. No country is likely to gain more from the continued co-operation of the U.K., U.S.A. and U.S.S.R., nor to suffer more from division among them.”²⁸ A polar world must postulate one world.

²⁸ Gwen M. Carter, “Canada and Foreign Affairs,” *Canadian Historical Review*, Vol XXVI, No 2, p 178 J W Watson and W R Mead, “Canada in the American Balance,” *Culture*, Dec 1944

4

THE ANTARCTIC SPHERE OF INTEREST

By LAWRENCE MARTIN

Nathaniel Brown Palmer, a Connecticut Yankee twenty years of age, discovered the continent of Antarctica, a bit of real estate larger than either Europe or Australia. Sixteen nations are interested in it, either because of explorations or because of territorial aspirations and claims. No country has title to any part of it that would bear scrutiny in a court of international law. In 1939, a hundred and twenty years after Palmer's discovery, President Franklin D. Roosevelt announced, "The United States has never recognized any claims of sovereignty over territory in the Antarctic regions asserted by any foreign state." For Antarctica's ice there is no market. Without its whales you could not have, at present prices, a large proportion of the soap to keep yourself clean. You do or may have to spread your bread with whale-oil margarine. The time may come when wire, made from Antarctic copper, will transmit your telephone conversations, your telegrams, and the stories in your newspapers, and play a part in your receipt of radio and television programs. Fuel-

LAWRENCE MARTIN, born in Stockbridge, Massachusetts A.B., 1904; Ph.D., 1913, Cornell. Honorary Consultant in Geography, Library of Congress, and formerly Chief of its Division of Maps; Map Intelligence Officer, Office of Strategic Services, Joint Chiefs of Staff; Geographer, U.S. Department of State; Chief, Geographical Section, Military Intelligence Division, General Staff, U.S. Army, and instructor, lecturer, or professor at a number of universities.

Author: *Seventh Continent*, 1947; *Antarctica Discovered by a Connecticut Yankee*, 1940; *The Perfect Day of an Itinerant Peacemaker*, 1929; *Alaskan Glacier Studies*, 1914; many maps.

poor Southern Hemisphere countries may eventually keep warm by burning low-grade coal from this South Polar icebox. World peace, or success in future war, may be affected by strategic considerations involving Antarctica and its adjacent islands. The Connecticut sealer tilted the lid of a Pandora's box in December, 1819, when he and his Stonington companions anchored the American brig *Hersilia* "a short distance from the Mainland." If these topics interest you in the Antarctic sphere, read on.

POLITICAL GEOGRAPHY OF THE ANTARCTIC

The map facing this page depicts Antarctica as something like a badly dented football with a peculiar peninsular protuberance, the Palmer Peninsula, often miscalled Graham Land, stretching northward toward the Cape Horn of South America. Its high points, attaining 16,000 to nearly 20,000 feet in altitude, are not all adjacent to the South Pole. Its coasts are indented by broad embayments rather than narrow fiords. More than nine-tenths of its area is smothered beneath snow and ice—the world's largest continental glacier, in no way dissimilar to the former continental glaciers of North America and Europe. Through the Antarctic ice sheet project nunataks—peaks and ridges in some cases, substantial mountain ranges in others. Surrounding Antarctica at all seasons is a formidable ice pack, partly made up of glacier-born icebergs, partly of tabular ice floes derived from frozen sea water. The ice pack in the South Atlantic, South Pacific, and South Indian oceans, although loosening and moving northward in summer, is an integral element of Antarctica. Outside or just inside this drifting sea ice, however, great circumnavigations have been made by England's Captains Cook and Biscoe, Russia's Captain Bellingshausen, the *Challenger* Expedition, the Norwegian whaling explorers, and others.

Fortunately, sturdy surface ships can be forced through the hostile floating barrier during the short summer season of the Southern Hemisphere, our own December, January, and February. In these days men can fly over it in airships. To this

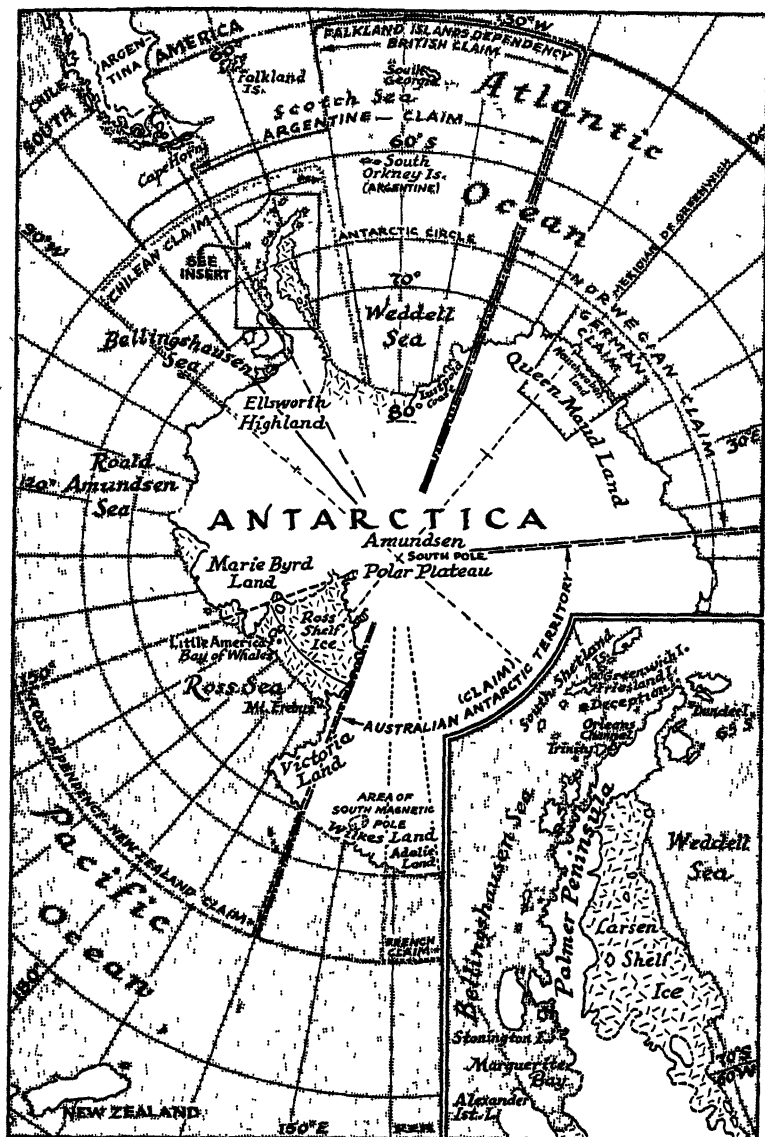


Fig. 6. Antarctic geography and territorial claims in 1948. The insert shows the scene of Palmer's discovery of the continent.

repellent sea-ice barrier the world owes, in substantial part, the long delay in solving the enigma of Antarctic political geography, the problem as to what nations will be able to establish sound title to the South Polar lands by discovery, exploration, settlement, administration, and exploitation of the seventh continent's promising but only partly ascertained natural resources.

The sixteen nations whose sphere of interest includes Antarctica are, in alphabetical order, Argentina, Australia, Belgium, Chile, France, Germany, Great Britain, Holland, Japan, New Zealand, Norway, Portugal, Russia, Spain, Sweden, and the United States of America. Nine of these countries have current claims to territory in the South Polar continent and its immediately adjacent islands.

Out of the 6,000,000 square miles of Antarctica less than one-fifth has ever been viewed by the eye of man. With the exception of about half a dozen areas, the Antarctic lands thus far seen are chiefly coastal. These are, first, the poleward routes of Amundsen, Shackleton, Scott, and Byrd together with tracts explored by their supporting parties and their scientific colleagues, Mawson, Marr, Debenham, Wordie, and others too numerous to mention. These routes stem from Ross Sea both at Little America and near the base of the one active volcano, Mt. Erebus. Unusually deep penetrations of the continent along non-poleward routes were those of the Australian David, to the South Magnetic Pole, and those of the American Gould and several other members of Byrd's parties.

A second group of more-than-coastal Antarctic explorations were those of the American Ellsworth who flew somewhat deeply inland from an island near Palmer Peninsula to Little America, and subsequently discovered and explored the American Highland; the non-landing flights of Ritscher's German aviators within Neu-Schwabenland in Norway's Queen Maud Land sector; the journeys of the Australian Rymill and the Americans Black and Ronne into the interior and across the base of Palmer Peninsula as well as southward; and the non-landing flights of the Australian-American Wilkins along the backbone of Palmer

Peninsula, the latter flight having given us the temporary impression that this great peninsula was an archipelago. Byrd's several penetrations of what has come to be known as Byrd Land, during each of his four Antarctic expeditions have yielded much knowledge of Antarctica along routes neither coastal nor poleward.

The motives of Antarctic exploration, however, have been partly accidental, and certainly this is true with relation to political geography. The four phrases "seals," "South Pole," "science," and "whales" express the motives. Exploration, throughout history, has often been in some measure accidental.

Man desired to go to the South Pole largely because no one had done so before. Much additional exploration and knowledge of areas visited was a result, since scientists were taken along for a part of the journeys. The fur seals and elephant seals were largely killed off, and whaling came to the fore. From the whaling factory ships still more exploration resulted; but the land portion of it was wholly coastal as far as the Antarctic mainland was concerned.

Political geography came into the picture very late. It was not considered necessary to complete the steps additional to exploration in order to go to the south end of the earth's axis, and to take scientists to places where they could satisfy their insatiable curiosity, or, for that matter, to hunt seals and whales. A number of countries, however, aspired to ownership of broader acres and, in the case of Great Britain, to collect fees from those who desired to engage in whaling. Hence Antarctic territorial claims began to appear. Today in 1948 every square mile of Antarctica is claimed by some nation or by the citizens of some country whose government has not yet backed them up by making a formal claim of sovereignty or by satisfying the usual procedure for twentieth century acquisition of additional territory.

In December, 1819, as already stated, Connecticut sealers from Stonington went to the South Shetland Islands and, having seen Antarctica, anchored a short distance from the mainland. John Quincy Adams, United States Secretary of State, spoke in

1820 of a "newly discovered island or continent." President James Monroe said the land discovered was one "of great extent." Monroe directed Adams to discuss with the Secretary of the Navy the sending of a warship to protect our sealers. With this official exchange of views was born the United States interest in eventually acquiring sovereignty in American Antarctica.

In November, 1820, Palmer, master of the American sloop *Hero*, visited the immediate coast of the Antarctic mainland south of Trinity Island at the northeast end of Orleans Channel in $63^{\circ} 45'$ south latitude. In January, 1821, he went to $68^{\circ} 00'$ south latitude in what came to be called Marguerite Bay, exploring the intervening coast in search of fur-seal rookeries. The young and competent discoverer of Antarctica revisited Marguerite Bay in November, 1821. The United States settlement there at Stonington Island was reoccupied in 1947 by Commander Finn Ronne, as a base for exploration throughout that year and part of 1948.

With these discoveries in the years from 1819 to the present century begins the public demonstration by the United States of America that we intend to settle and to establish sovereignty in the portion of Antarctica south of Cape Horn, and probably in all other parts of the continent within the Western Hemisphere

During the four and a half centuries from 1493 to 1948 Antarctic lands have been claimed by most of the countries listed at the outset of this chapter. Portugal and Spain began the practice. By the 1493 Bull of Pope Alexander VI, modified by the 1494 Treaty of Tordesillas, Portugal acquired the right to all lands from the North Pole to the South Pole lying east of the meridian of approximately $46^{\circ} 30'$ west of Greenwich and its equivalent on the other side of the world, and Spain to all lands except the Portuguese. Neither the Pope nor the Portuguese and Spanish monarchs and their subjects had ever seen Antarctica; but empires have often been claimed and acquired upon the basis of pin-point areas discovered, seen, or heard about.

In 1606 Pedro Fernández de Quirós claimed, on behalf of King Philip of Spain, all the lands he had newly discovered or desired to discover in a sector south of the New Hebrides, Gente Hermosa, and other Pacific islands and extending as far as the South Pole. The Pope's Line purported to give Portugal and Spain hemispheres; Quirós made the first Antarctic sector claim. If successfully followed up, this would have given Spain most of New Zealand's Ross Dependency claim fronting on the Antarctic coast not far from Little America. These two Spanish and one Portuguese territorial claims seem farfetched. Since their initiation by Quirós, sector areas bounded by meridians of longitude and extending to the South Pole or the North Pole have been proposed by various authorities, including Senator Poirier of Canada. Their weakness lies in the undefendable assumption that portions of the high seas, even if covered by floating ice, can belong to any single nation, and that islands can be claimed and acquired before anyone has discovered them.

Three centuries later, in 1908, Great Britain set up her Falkland Islands Dependency claim. This so-called dependency included an Antarctic area, certain South Atlantic islands, and parts of Chile and Argentina, its limits being the meridians of 20° and 80° west longitude and the parallel of 50° south latitude. Who can say that it was actually less farfetched than the Spanish and Portuguese Antarctic territorial claims which preceded it by three and four centuries? It covered not only the Palmer Peninsula, alias Graham Land, the South Shetland, South Orkney, and South Sandwich islands, but also the southern 425 miles of South America. This claim stood unchanged until 1917, when the British issued Letters Patent modifying the limits of the Falkland Islands Dependency claim to produce an Antarctic sector from 58° south latitude, for the part of the lands and waters aspired to between 50° and 80° west longitude, leaving the remainder of the claim as in 1908.

During the latter part of the three decades since 1917, four nations have claimed Antarctic lands within the area aspired to by Portugal, by Spain, and by Great Britain, although not settled

or administered by any of them. Argentinians and Chileans each have a sector claim within the Antarctic area south of Cape Horn. Belgium has an unofficial claim. The United States Antarctic Service set up its East Base on Marguerite Bay in 1939-1941 under Admiral Richard E. Byrd's assistant, Commander Richard B. Black. It is here that Commander Finn Ronne renewed American settlement and initiated new discovery in 1947-1948, within tracts previously unvisited by man, southward of Palmer Peninsula. President Roosevelt had authorized in 1939 taking steps here which might support "a sovereignty claim by the United States Government."

Thus a part of American Antarctica, the Palmer Peninsula, South Shetlands, and adjacent archipelagos, presents a complication of sovereignty claims. Argentina, Belgium, Chile, Great Britain, Holland, Portugal, Spain, the United States have interests; Holland, Germany, Russia, France, Belgium, Sweden, Australia, and the United States have explored there but made no formal or public territorial claims; the appetites of Argentina, Chile, Great Britain, and the United States are still voracious. Who will eventually swallow this richest piece of the Antarctic pie?

American Antarctica continues westward from Palmer Peninsula toward Little America near Bay of Whales in Ross Sea, the site of English, Norwegian, Japanese, and American explorations. Two sectors here were explored by United States citizens. First in order of position comes Ellsworth Land, to which we have a treble basis for a sovereignty claim. Dr. James Eights of Albany, New York, was in a sense the discoverer of its northern coast. In 1830 he deduced the existence of some 480 miles in the north-facing littoral of Ellsworth Land. His only error was to consider it to be a string of islands rather than the border of the Antarctic mainland. Eights Peninsula forms the western limit of this land. Its shores are washed by Bellingshausen Sea. Peter I Island, discovered by the Russian Bellingshausen, and now claimed by Norway, lies some 250 miles offshore.

Our second basis for a formal United States claim to the Ells-

worth Land sector of Antarctica is that Lincoln Ellsworth made a traverse of its whole width in 1935 during his airplane flight from Dundee Island, northeast of Palmer Peninsula, to Little America. He landed at three places within the area claimed, after having dropped a United States flag at the point where his plane crossed the meridian of 80° west longitude. Near $104^{\circ} 10' \text{ W.}, 79^{\circ} 12' \text{ S.}$, after careful determination of the geographical position of this first of his landing places, he raised the American flag. The Congress of the United States took formal account of this American's move toward our acquisition of a tract of land more than a third as large as the whole United States of 1790-1800. The Act of June 16, 1936, authorized awarding Ellsworth a special gold medal "for claiming on behalf of the United States approximately three hundred and fifty thousand square miles of land in Antarctica between the eightieth and one hundred and twentieth meridians west of Greenwich, representing the last unclaimed territory in the world . . ."

The third body of support for American acquisition of the Ellsworth Land sector was made by Richard E. Byrd. In 1940 he explored and mapped from the air the northern coast of Ellsworth Land in the eastern part of Amundsen Sea and the western part of Bellingshausen Sea. Moreover, the sledging parties from Byrd's United States Antarctic Service East Base in Marguerite Bay under Commander Black had previously explored, studied possible mineral resources, and carried on other scientific work in the east edge of Ellsworth Land as well as in southern Palmer Peninsula on the Weddell Sea side and Alexander I Island coast.

Byrd's explorations in the Antarctic terrain between Ellsworth Land, the Ross Sea area near Little America, and the South Pole were made during the field seasons of 1928-1930, 1933-1935, 1939-1941, and 1947. The first two expeditions were private, the last two official. By sledge and tractor journeys and airplane flights he mapped and studied a vast extent of Antarctica. The Byrd Land sector is situated between the coast, the South Pole, and the meridians of 120° and 150° west longitude. It constitutes the whole tract thus far claimed publicly by Byrd

as a private United States citizen. In addition it is important to record that Laurence M. Gould, while on a sledge journey in 1929, raised the American flag and claimed "in the name of Admiral Richard E. Byrd this land as Marie Byrd Land, a dependency or possession of the United States."

In the Ross Sea area, as in the Palmer Peninsula and South Shetland Island region, sovereignty claims overlap. Initial discoveries and explorations were made by the English navigator Sir James C. Ross. Scott and Shackleton and many others carried on, as did the Norwegian Amundsen, discoverer of the South Pole, and the Japanese explorer Shirase. New Zealand has a Ross Sea Dependency claim, set up in 1923, and overlapping the 1606 sector claim of Spain. From Bay of Whales, Little America, and various positions at sea, Byrd's United States official "Operation High Jump" carried out Antarctic exploration in 1947. Some 845,000 square miles of territory was seen and 70,000 photographs were taken from the air. Approximately 310,000 square miles of this land was discovered rather than reexplored. About 75,000 square miles of hitherto unexplored ocean was observed and charted. At least 3,000 linear miles of nearly unknown Antarctic coast line was mapped with greater accuracy than before. Some 16,000 radio messages were sent. The operations in 1947 extended far outside the Byrd Land and Ellsworth Land sectors. Political geography, as will be shown in a subsequent paragraph, faces a vexatious problem with respect to what nation will be able to establish durable title to the portion of Antarctica at and near Little America.

American Antarctica may also be said to extend west of the Ross Sea area. A great sector, lying between 160° E., and 45° E., contains the Australian Antarctic Territory claim which overlaps Wilkes Land, Adélie Land, and Ellsworth's American Highland as well as much territory discovered or explored by Norwegians and by Germans. The French Adélie Land was set up as a narrow coastal band in 1841, following exploration by Dumont d'Urville. In 1938 it was enlarged into a full sector bounded by the meridians of 136° 30' and 142° east longitude;

this Antarctic territorial claim is one of the administrative dependencies of the French island of Madagascar off the east coast of Africa.

This great sector is referred to as a portion of American Antarctica for three principal reasons. To the official United States Exploring Expedition of 1839-1842 in a half-dozen Navy ships we owe the discovery, mapping, and scientific investigation of some 1,800 miles of Antarctic coast and waters. Wilkes Land, whatever its inland extent, comprises nearly half the coastal extent of the present Australian Antarctic Territory claim. In the second place a substantial area, both coastal and inland, between Victoria Land on Ross Sea and the western part of the Australian-claimed sector was remapped by Byrd's aviators in 1947, an area of not less than 25,000 square miles. Inland areas seen and photographed and landed upon included two seemingly deglaciated areas, inappropriately called "oases" in the radio dispatches. Ice-free lakes were visited. A third good reason for alluding to this region as a portion of American Antarctica is that an inland tract of 75,000 square miles, a substantial distance west of Wilkes Land, was discovered and claimed for the United States by Lincoln Ellsworth in 1939.

Again we are confronted with a grave problem of Antarctic political geography. An exceedingly large expanse of Antarctic land, discovered or explored by Englishmen, Frenchmen, Norwegians, Germans, Australians, and Americans, is claimed by the French and the Australians. No nation has settled or administered any part of it. What country or countries will eventually establish sovereignty there?

One approach to a solution might include the following elements: (a) New Zealand might consider withdrawing, in favor of the United States, the small portion of the Ross Dependency claim within the Western Hemisphere and acquire from Australia the portion of that nation's Antarctic claim east of Adélie Land; this would give New Zealand a sector slightly larger than that now claimed and one with more land within it; (b) the United States might waive, in favor of Australia, its partly in-

choate title to Wilkes Land discovered in 1840 and 1947, as well as American Highland discovered and explored in 1939, and also the land of lakes in the hinterland of Ingrid Christensen Coast discovered and explored by Byrd's fliers in 1947; (c) Australia might enjoy helping her good neighbors, New Zealand and the United States, to say nothing of unclouding her title to the vast expanse of Wilkes Land. Neither Norway nor Germany has made any territorial claims in this portion of Antarctica although Christensen, Riiser Larsen, and other Norwegians have explored much coast within this sector, and Drygalski with other Germans performed remarkable scientific studies in Kaiser Wilhelm II Land. All this would have to wait upon some measure of settlement and resident administration. It would be hoped that Australia and New Zealand might use their good offices to help convince their sister nation Great Britain that her Falkland Islands Dependency claim can never be recognized by the United States or Argentina or Chile, and perhaps by no Latin American country because of the Monroe Doctrine. Without such friendly agreement it would be hard to secure the consent of our President and Congress to a complete surrender of such rights as we possess in Wilkes Land, American Highland, and some of the tracts discovered and explored by Byrd's Operation High Jump in 1947.

The remainder of Antarctica is a great sector between 45° east longitude and 20° west longitude together with a circular area—diameter, 97 miles—at the South Pole. This is the Norwegian Queen Maud Land sector claim of 1939 plus the Amundsen polar plateau claim of December, 1911. The Norwegian sector claim adjoins on the west the Palmer Peninsula, Luitpold Coast and Caird Coast. Norway's territorial claim is complicated by a truncated sector claimed by Germany in 1939 and called Neu-Schwabenland. Germans had never made a territorial claim as a result of Filchner's discoveries on Luitpold Coast in 1912 or those of Dallman upon and near Palmer Peninsula in 1874. Again we are confronted by overlapping territorial claims. Perhaps Norway will eventually withdraw her claim to

the tiny circular area at the South Pole, except the part within the Queen Maud Land sector, and also to the Peter I Island claim within the Western Hemisphere. Norway will be the immediate neighbor of the original American Antarctica, the Palmer Peninsula and islands adjacent, since Great Britain, under the Monroe Doctrine, will not be able to retain the Caird Coast or to acquire the field of Ronne's 1947-1948 explorations on the south coast of Weddell Sea, which have definitely negated the theory of direct water connection thence to Ross Sea.

The eventual American Antarctica, if the United States decides to make official the informal claims of its citizens, might turn out to comprise all the lands from 20° to 180° west longitude with New Zealand, Norway, France, and Australia as neighbors. Otherwise Argentina and Chile might share the Western Hemisphere portion of Antarctica; there might be a Chilean, Argentinian, and United States condominium; or all Antarctica might be placed under United Nations trusteeship.

S. W. Boggs, geographer in our Department of State, does not feel sure the Monroe Doctrine applies to Antarctica. Most of our neighbors in the South Polar continent still feel that sovereignty can be acquired by raising flags and making unilateral claims. However, John Quincy Adams, Charles Evans Hughes, Henry L. Stimson, Cordell Hull, Dean Acheson, and many others, including England's Queen Elizabeth, have held that sovereignty is not achieved without settlement and administration.

ECONOMIC GEOGRAPHY

Seals constitute the earliest developed resource of Antarctica. Seal-seeking Yankees made the initial discoveries in this continent. Important explorations were made by sealers of other nations also. We have specific records of the taking of at least 445,000 fur-seal skins from adjacent waters by the crews of 170 vessels between 1819 and 1906, to say nothing of hundreds of barrels of elephant-seal oil. These maritime businessmen came from the United States, Argentina, England, Australia, Canada,

and Russia. The fur-seal pelts sold for more than a million dollars. The Antarctic fur seals were largely killed off by reckless, unplanned operations, but these tough, persistent marine mammals renewed themselves so that American bottoms kept going back to the initial South Shetland and other Antarctic settlements, thus supporting a basis for eventual United States sovereignty there. It is not impossible that the seal resource might be renewed on a large scale by seals transplanted from Uruguayan rookeries, and protected by limitation of the numbers to be killed in a given season, as in the Pribilof Islands of Alaska.

Whales in Antarctic waters have brought much wealth to various nationalities, notably the Norwegians and the Americans. Whaling is at last reasonably well regulated now that we have international agreements. During four months in 1946-1947 many whales were taken in Antarctic waters by seven Norwegian, three British, and five Japanese, Russian, or Dutch vessels. The whale oil alone will fetch some \$125,000,000. The Antarctic sphere of interest has whaling relationships to us in the United States as well as to a great many other countries throughout the world. It is impressive to observe that twice recently General MacArthur allowed a pitiful remainder of the Japanese merchant marine to proceed to Antarctic waters for whaling. In Japan the whale meat is an article of food for man. Hermann Göring sent his 1938-1939 expedition to Norwegian Queen Maud Land primarily because of existing and anticipated need for fats. He sent no whaling ships; but his exploration of Neu-Schwabenland was an intended basis for future whaling in Antarctic waters by Germans. Hence the attempts to acquire sovereignty for the Reich.

Fats derived from whales provide a principal basis for our soap. There was a brief period when the English collected fees for the use of South Shetland ports by Norwegian whaling vessels; this was before the days of factory ships and various other modern procedures. One American soap firm is reported to have purchased annually all Norway's Antarctic whale oil.

Certain lubricants for very delicate bearings in marine ma-

chinery and airplanes are derived from whales. The glycerine by-product of soap factories is an essential of explosives. Control of Antarctic whaling grounds, then, is related both to the economic geography and to the strategic geography of the Antarctic sphere of interest.

The mineral resources of Antarctica have no commercial exploitation. The uranium story, frequently published and broadcast in 1946, has no basis. Its ores may be there, but there is no more likelihood of it than that uranium may be found in New England, Pennsylvania, or California.

Antarctica is known to have thick and abundant seams of lignite and semibituminous coal. None has ever been mined or exported. Air transportation, however, makes its utilization possible, especially as the Temperate Zone countries of the Southern Hemisphere are notably deficient in coal, petroleum, natural gas, and other fuels for heating, manufacturing, motive power in ships, railway trains, and airplanes. The amount of Antarctic coal seems to be very great. It has been estimated by Laurence M. Gould that "the Antarctic has coal reserves second only to those of the United States."

Glacial geology reveals the attractive possibility of rich copper lodes. No lodes or veins "of sufficient amount to be of commercial value" have, thus far, been identified. Glacial erratic boulders containing copper have been found in the South Shetlands and other islands adjacent to Palmer Peninsula. One, from the first-named locality, yielded 44 per cent pure copper.

Cost of transportation, climatic conditions, and competition with known and developed natural resources of the rest of the world must always weigh heavily in the economic geography of Antarctic lands and coasts and in the bordering seas within as well as outside the girdle of pack ice. Upon the basis of the minerals thus far identified in Antarctic rock ledges and glacial erratics, one cannot deny that the continent may eventually produce iron, silver, gold, tin, manganese, molybdenum, thorium, and other ores in commercial quantities for exportation. Petroleum has been hinted at.

The lowly Antarctic grasses and mosses have no identified medicinal or commercial value. The economic geography of Antarctica is thus far limited to the items mentioned above. Whales are the South Polar region's money crop. Seals have been, and may be again. The coal may be important in time to come. Copper is an economic resource for which we have high hopes.

STRATEGIC GEOGRAPHY

It was not without deep significance that the late President Franklin D. Roosevelt told a member of the Congress of the United States, on May 27, 1940, that he considered it to be "of great importance to the continental defense to keep for the twenty-one American republics at least one more year of occupancy of that part of the Antarctic continent south of America . . . to keep a clearer title than that claimed by any other non-American country." This portion of American Antarctica, the South Shetland archipelago, the island-festooned Palmer Peninsula, and the coasts and hinterlands of Bellingshausen Sea and Weddell Sea evidently have importance in strategic geography.

According to Admiral Byrd the South Shetland and Palmer Peninsula region has high strategic value as a site for naval bases. This he concluded in 1941 after having encountered a Japanese cruiser in Antarctic waters on his way home from the government expedition which he led in 1939-1941, and after having learned of the setting up of a German naval repair shop at Deception Island in the South Shetlands. It was thought that the German pocket battleship *Admiral Graf Spee* might possibly have been supplied from a Deception Island base during her South Atlantic raids. In January, 1942, a 12,000-ton German raider captured two Norwegian factory ships laden with whale oil and tried to take a third south of South Georgia. Byrd believed in 1947 that future conflict may "lash at our nations over one or both poles." Admiral Cruzen, his operational commander

in 1947, thinks the defense of America may hinge on the North and South poles.

During another war the tactical center from which an enemy might strike at Chile, at Argentina, or at the Falkland Islands by surface ship, submarine, or warplane is the South Shetland region. Port Williams, the drowned crater harbor inside Deception Island, is not the only or necessarily the best center for our main naval and air base. Yankee Sound, sometimes erroneously called MacFarlane Strait, lying between Greenwich and Friesland islands, also appears to present advantageous possibilities as an all-season base in view of climatic conditions during the Antarctic winter. No other seaports in Antarctica present as promising strategic possibilities.

The Bay of Whales near Little America in the Ross Sea area is not without importance. Byrd's Operation High Jump of 1947 demonstrated that hostile military forces could have flown all over Antarctica from a naval base and air base in this locality. This might not, however, be a strategic center for enemy attack on New Zealand, Australia, or other inhabited areas. If and when Antarctic natural resources are developed, the Little America site will become important for the defense of Antarctica.

If you look at your globe or a map of the Southern Hemisphere centered upon the South Pole, you will see that no part of Antarctica lies beneath a natural or important commercial or wartime flying route, as is the case in the Arctic Ocean. Although the Buenos Aires to Melbourne route would pass within 1,000 miles of the South Pole, air traffic from South Africa, New Zealand, or Australia to either of the others would not naturally cross any part of Antarctica, or go close enough to it so that munitions, fuel, food, or repair bases of an enemy could advantageously be set up anywhere on the seventh continent. Antarctica as a whole appears to possess relatively little strategic importance. The Palmer Peninsula and South Shetland region is the chief exception. Doubtless for that reason the policy of the United States must continue to be that we can never consent to actual acquisition of European or other non-American colonies

within the Western Hemisphere portion of the continent discovered by Palmer in 1819. Under the Monroe Doctrine it is feasible and desirable for us to adhere to this position. We prefer not to have Great Britain or any Old World power acquire Antarctic lands within this hemisphere. As recently as April 10, 1941, our Congress adopted Joint Resolution 7, providing that "the United States would not recognize any transfer, and would not acquiesce in any attempt to transfer, any geographic region of this hemisphere from one non-American power to another non-American power." Our good neighbors in Latin America will hold firmly to the same policy, as is shown by another clause of this Joint Resolution. It provides that, "if such transfer or attempt to transfer should appear likely, the United States shall, in addition to other measures, immediately consult with the other American republics to determine upon the steps which should be taken to safeguard their common interests."

The United States has already shown its intention to implement American Antarctic territorial claims, both in the Palmer Peninsula, South Shetland, Ellsworth Land area and in the Little America, Byrd Land, Wilkes Land area. The two thoroughly official American expeditions under Admiral Byrd in 1939-1941 and in 1947, the Ronne expedition in 1947-1948, and the United States Navy expedition in 1947-1948 under Lieutenant R. G. Thompson of the Hydrographic Office indicate clearly that our settlement and administration of Antarctic lands is to be much more continuous than our earlier activities there.

At Bogotá, Colombia, in April, 1948, the problems of Antarctic sovereignty were placed before an Inter-American Conference. It was even suggested that all European colonies in Hispanic America should be given up.

Back of this stand the facts that the British, the Chileans, the Argentinians, and the Americans from the United States are beginning to take steps more definitely capable of being interpreted as settlement and administration, in contrast to discovery, exploration, sealing, whaling, and brief, interrupted scientific work.

Chile set up a lighthouse in 1942 in the Melchior Archipelago between Anvers and Brabant islands and refueled it in 1947. In February, 1948, the President of Chile himself visited a base on Greenwich Island in the South Shetlands and another Chilean base called O'Higgins Land on the Palmer Peninsula of the Antarctic mainland.

Argentina set up a weather station on Deception Island in the South Shetlands in 1947. Here she had performed symbolic acts in 1942, planting an Argentinian flag and depositing a cask containing a document. These are said to have been actually removed by the British in 1943 and returned to the government at Buenos Aires. Protests were made, and the Argentinian claims of sovereignty were renewed.

In 1948 both Argentinian and British warships are said to have visited this South Shetland island. Argentina also reiterated her claims not only to parts of Antarctica and its islands but also to the Falkland Islands and the whole of the so-called Falkland Islands Dependency of Great Britain.

The Ronne Antarctic Research Expedition of 1947-1948 on a United States Navy ship, assisted at times by two Navy ice-breakers, encountered British explorers and scientific investigators at our East Base in Marguerite Bay and at other points in Palmer Peninsula, where Commander J. W. S. Marr, on behalf of the Falkland Islands Dependency claim of Great Britain, and J. M. Wordie, chairman of the Research Committee of the *Discovery* Expeditions, have made visits in recent years.

Obviously all these activities call for early and amicable settlements of the overlapping Antarctic territorial claims. The United States of America cannot reasonably postpone much longer the decision to publicly claim substantial Antarctic areas as forecast by the 1936 Act of Congress, quoted above, which awarded Ellsworth a gold medal for claiming 350,000 square miles of Antarctic land "on behalf of the United States," and also by the government expenditures for the several recent official Antarctic expeditions under Byrd, Thompson, and other Americans

CHAPTER II

The Heartland and the Expansion of the U.S.S.R.

5

HEARTLAND REVISITED

By HANS W. WEIGERT

Lay thine ear close to the ground and list
if thou canst hear the tread of travellers.

First Part of King Henry IV, Act II, Sc 2

Halford Mackinder (1861-1947) listened to the ominous sounds from the earth longer and more intensely than any other living student of human geography. From time to time, he recorded his impressions in brief statements which combined geographic wisdom with prophetic vision. The prose of these statements is rare and forceful poetry. To Mackinder geography was indeed "an art of expression parallel to and complementary to the literary arts . . . it ranges values alongside of measured facts. Hence 'outlook' is its characteristic."

While the shadows cast before a troubled mankind were growing, Mackinder's words increasingly became warnings. Yet nobody seemed to listen to the voice that told of the "tread of travellers" in the darkness. In 1904 and again in later years, Mackinder spoke unheeded of the portentous footfalls. Then, a

HANS W. WEIGERT, born in Berlin, Germany. Dr. juris utriusque, University of Freiburg, 1926. Formerly Professor of Geography and Political Science in various universities and colleges, at present consultant to the United States Military Government in Berlin.

Author: *German Geopolitics*, 1941, *Generals and Geographers: The Twilight of Geopolitics*, 1941; articles on political geography and international relations. Coeditor, *Compass of the World*, 1944.

few years ago, his message suddenly returned "as a ghost revisiting a world in which it lived without much honor." The ideas of Mackinder burgeoned into significance in the turmoil of the Second World War and overnight became imperatives for arm-chair strategists. "Heartland" and "World Island" were uncritically accepted as indispensables in a new geographical jargon—in spite of or, often, because of the fact that its most eloquent sponsors were in doubt as to how to define the boundaries of that mysterious region, "Heartland."

They were curiously attracted by the mystery and glamour woven around the Heartland and World Island catchwords of what seemed to be a new geography. Their curiosity increased when they learned that Mackinder's warnings, addressed to the peacemakers assembled in Paris, had been duly noted and clearly understood by one of the Enemy: General Karl Haushofer. The mysteries of the Heartland and the effect which Mackinder's ideas had had on the enemy were exciting enough to occupy the interest of his readers in 1942 and later and to distract them from the broader aspects of his political world geography. However, it is these broader aspects that are the problems of a new generation of peacemakers.

Mackinder was outstanding among modern geographers in showing history—geography set in motion—to be part of the life of the world organism and in basing a system of human geography on the thesis that the world has become a *closed unit*. To stress this basis of Mackinder's approach to political geography at a time when "global war" and "global geography" are current coin, sounds like carrying coals to Newcastle. "Global" concepts, however, are of recent date. It remains to be seen whether they will survive the war or whether competing and contrasting closed-space ideas, such as "geographic isolation" or "continentalism," will not regain the ground they have lost since Pearl Harbor. Mackinder's contribution will be fully appreciated only if we realize now that the postwar temptation will be to build a politico-geographical world which would justify continental regionalism especially in North America and the U.S.S.R.

Mackinder assumed that what he described as the "Columbian epoch," a period of geographic exploration and expansion lasting four hundred years, had ended around 1900. He sought and found a new formula to express certain aspects of geographical causation in world history. The "Westward Course of Empire" concept, and Frederick J. Turner's doctrine of the passing of the frontier and its significance in American history, had been attempts in the same direction. But Mackinder went further. In 1904, he envisaged a new history characterized by a "closed political system" of world-wide scope. "Every explosion of social forces," he said, "instead of being dissipated in a surrounding circuit of unknown space and barbaric chaos, will be sharply re-echoed from the far side of the globe, and weak elements in the political and economic organism of the world will be shattered in consequence."

The "Heartland" specialists usually ignore these foundations of Mackinder's political geography. They forget that we cannot truly define "Heartland" or "World Island" unless we first understand the premises of Mackinder's thesis: the world has become a closed system; power, in this closed unit, is mobile on the land and in the air to a degree undreamed of in the Victorian age of sea power. The Victorian age is dead. Yet its ideas still live. Man finds it "easier to change the face of nature than to change his own mind."¹

Mackinder's consciousness of the passing of the Victorian sea-power age made him see Europe and its political geography as subordinate to Asia. It is in Asia that land power and land-based air power have had their greatest opportunities to challenge established power positions in the world at large. The mobility of land power (not land power as such) in competition with the mobility of sea power evolved as a decisive geopolitical feature of the twentieth century. By evaluating the competition and possible clash between sea and land power, Mackinder discovers the "pivot region of the world's politics": the Heartland

¹ Vilhjalmur Stefansson, *The Friendly Arctic*, 1943 ed., p. 713.

of Eurasia. And he does not hesitate to project the effects which an increasing mobility of military and economic power in this area is bound to have on the rest of the world. In 1904, he said: "The century will not be old before all Asia is covered with railways. The spaces within the Russian Empire and Mongolia are so vast, and their potentialities in population, wheat, cotton, fuel, and metals so incalculably great, that it is inevitable that a vast economic world, more or less apart, will there develop inaccessible to oceanic commerce."

This pivotal area Mackinder projected as an organic unit within the world unit. Inaccessible to ships but covered with a network of railways, the basins of inland drainage of Eurasia are seen as the homeland of a new Russia which is successor to the Mongol Empire. From its central position the Soviet Union can exert pressure on Finland, Scandinavia, Poland, the Balkans, Iraq, Iran, Turkey, and India. The centrifugal power which drove the horse-riding nomads of the steppes westward and southward against the settled peoples of Europe is still a living force in the Russian Heartland. If ever it succeeded in expanding over the marginal lands of Eurasia, if ever it were able to use its continental resources for fleet building, then, Mackinder felt, "the empire of the world would be in sight." And to leave no doubt about the direction of his fears, forty years ago he added: "This would happen if Germany would ally herself with Russia."

When Mackinder reexamined his original thesis at the close of the First World War, he found that his "thesis of 1904 still sufficed." Hence his warning: "Who rules Eastern Europe commands the Heartland. Who rules the Heartland commands the World-Island. Who rules the World-Island commands the world." It became much too smooth a slogan when it was dusted off in our day. Most of those who used it persistently were fascinated more by the general appeal of the slogan than by its geographic realities.

The Heartland of Europe and Asia had essentially the same frontiers in 1918 as Mackinder's "Pivot Area" of 1904. It comprised the vast expanse of the basins of Arctic and inland

drainage which measure nearly half of Asia and a quarter of Europe, and which are accessible by ocean only from the north. As a strategical concept, the Heartland includes all regions which can be denied sea power. Railways, growing and expanding inward, have changed its face continuously since 1904 and have tested Mackinder's thesis. The airplane has since appeared in skies over the Heartland as a new instrument of geographical surgery, and Mackinder greets it as an ally to land power in the Heartland.

The First World War, Mackinder sees as the climax in the eternal conflict between continental land power and marginal power, backed and fed by sea power: "We have been fighting lately, in the close of the war, a straight duel between land power and sea power. We have conquered, but had Germany conquered she would have established her sea power on a wider basis than any in history, and in fact on the widest possible base."

The third and final test of the Heartland formula was undertaken by Mackinder in an article he wrote in 1943 for *Foreign Affairs*: "The Round World and the Winning of the Peace." To Mackinder, the test was positive; he found his concept "more valid and useful today than it was either twenty or forty years ago."

Yet, while the original concept of the Heartland remained basically intact, its frontiers were significantly revised. The revisions were required in order to accommodate certain major changes in the political geography of the world since 1904 and 1918. The territory of the U.S.S.R. remains equivalent to the Heartland. But there is one rather important exception. A vast area within the Soviet Union which begins east of the Yenisei River, and whose central feature is the Lena River, is now split from the original Heartland. "Lenaland Russia" has an area of three and three-quarters million square miles but a population of only some 6,000,000, in contrast to "Heartland Russia" which covers four and a quarter million square miles and has a rapidly growing population now numbering 170,000,000.

Heartland Russia, backed by the natural reserves of Lenaland,

looms with greater power than the Heartland Mackinder envisaged in decades past. What then seemed to be mere speculation has grown into reality, and Mackinder can now state as a fact that "except in a very few commodities the country is capable of producing everything which it requires." Again he views the open western frontier of the Heartland. His conclusion that, "if the Soviet Union emerges from the war as conqueror of Germany, she must rank as the greatest land power on the globe" is slightly less emphatic than his vision of the approaching "empire of the world" (1904). Otherwise, the Britisher's view of the geopolitical relationship of Russia and Germany had remained unchanged.

Any attempt at a critique of Mackinder's powerful generalizations should begin with the acknowledgment of our indebtedness to the man who did more in our time than anybody else to enlist geography as an aid to statecraft and strategy. The fundamentals of his closed-space concept stand so firmly today that we almost forget how revolutionary the concept was when first formulated forty years ago. The same observation applies to Mackinder's land-power thesis which, appearing at what seemed to be the height of the Victorian sea-power age, seemed shocking and fantastic to many in the English-speaking world. But in reviewing his thesis today, we should remember that it is the concept of a man who viewed the world from England, "that utmost corner of the West." Only a Britisher could have written as Mackinder did. Recognizing this and taking account of the technological changes which surpassed even Mackinder's imagination, we should have sufficient perspective today to speak critically of the theory of the Heartland.

It is perhaps not incidental that the logic of Mackinder's Heartland seems to reveal itself best on a Mercator world map (such as Mackinder used when he first laid out his blueprint). Here the Heartland lives up to its name. We see it surrounded by a huge arc forming an inner crescent which includes Germany, Turkey, India, and China. Beyond the crescent of

peripheral states, Mackinder envisaged an outer crescent which embraced Britain, South Africa, Australia, the United States, Canada, and Japan. Again the Mercator projection lent a helpful hand in constructing what seemed to Mackinder a "wholly oceanic" and "insular" crescent. However, we find it difficult, if not impossible, to visualize this relation of the Heartland to a surrounding inner and outer crescent if we exchange the Mercator map for the globe or any azimuthal-equidistant map. The North America which seemingly was a part of a chain of insular Powers distant from the Heartland now becomes a geographical myth. Instead we see the Heartland and North America in destiny-laden vicinity. We see the Heartland over the top of the world as a politico-geographical reality as the result of the lessons of a new geography of world air power. We have another view of the Heartland than Mackinder, who plotted it from Britain and with the destinies of Britain foremost in his mind. While time has verified Mackinder's concept of Russia's growing importance as a land Power in a pivotal area, the skyways of the Arctic Mediterranean give validity to a new way of regarding the geographical relations of North America and the U.S.S.R. The inaccessibility of the vast inland spaces of the Heartland became evident when the Heartland Power was attacked by Germany in the west, where the Heartland opens itself to invasion. But, seen from North America and in terms of new communications, inaccessibility and vastness no longer conceal the Heartland from us. It lies no longer behind an impenetrable wall of isolation.

In his *Foreign Affairs* article, Mackinder seems to have made major revisions in his original concept of the relationship of the rest of the world to the Heartland. We have noticed that the original Heartland thesis remained basically unaltered, although the emphasis on the thinly populated "Lenaland" area has been toned down. But the surrounding crescents (and particularly North America as a member of the outlying insular Power group) are viewed by the Mackinder of 1944 in a different light. This is significant. The original British view, which left North

America seemingly isolated and beyond the sphere of power zones directly linked with the Heartland, has now been replaced by an Anglo-American world view.

Did Mackinder thus silence his critics? I wonder. The critics have been few, and those who questioned the validity of his thesis stressed uniformly the pivotal importance of the densely populated regions of the coast or rim lands. The overemphasis, however, on either inland or rim-land location neglects the complementary character of the two as well as their constantly changing values. Mackinder understood these dynamics clearly. He reexamined and revised his appraisal of the relationship between interior and peripheral; he perceived from Britain that the peripherals felt, more than ever, the shadow of the continental land mass in its expansionist movement. Thus he projected a new vision of the Heartland in its relation to the surrounding zones. In doing so, he envisaged the geographic link between the Heartland and the Anglo-American world in a new light. From Mercator he turns to the globe. Around the north polar regions he hangs a "mantle" of deserts and wildernesses. From the Sahara Desert, the mantle extends to the deserts of Arabia, Iran, Tibet, and Mongolia. From there it spreads out across the "wilderness of the Lenaland" to the Laurentian Shield of Canada and to the subarid belt of the United States.

Thus he constructed what seems to be a new "pivot of history": a zone including both the Heartland and the basin of the North Atlantic. Thereby Mackinder reveals a new fulcrum of world power and a new relationship between the Heartland and the outer world. The enlarged pivotal area of 1944, he describes by drawing a great-circle arc from the center of the Yenisei River across the Mid-Ocean to the center of the Mississippi valley. The arc leads across the bridgehead of France, over the stronghold of Britain—"a Malta on a grander scale"—to the vast arsenal of the eastern and central United States and Canada. This North American, British, French, U.S.S.R. bloc comprises a power fulcrum of one billion people. It neatly balances that other thousand million in the monsoon lands of India and China. "A

balanced globe of human beings. And happy, because balanced and thus free."

But the balance is too neat and perfect to be true. The great circle which Mackinder describes does not in fact cut the coast of France but passes to the north of Greenland. Thus he showed himself to be an unwitting prisoner of Mercator. On the other hand, by including the coast lands of Europe as well as the North American rim lands and central regions, he wisely acknowledged a significant geopolitical fact. North America is no longer part of a separate outer crescent; her security zone extends via Britain into the rim lands of western Europe. Yet Mackinder still looked at the world with British eyes. Britain is the vital link in his concept of the "Mid-Ocean" as the main artery which makes the United Nations bloc (without China) a life force. Did he not try to prove too much? Do not his own lessons of a phase of history in which land power (plus land-based air power) challenge the remnants of the Victorian age, guide us to additional routes which extend from North America to the Heartland?

Those routes do not touch Britain, although they touch, through Canada, life lines of the British Commonwealth of Nations. Mackinder's vision pushes the "Lenaland" and with it the whole of Soviet Asia into the background. This seems logical if one views the Heartland from the British Isles. However, a view of the Heartland from any place in North America cannot blind the fact that the Mid-Ocean avenue is by no means the only one connecting North America and the Heartland. The established sea lanes of the North Atlantic are and will remain the cheapest avenues; but, in years to come, traffic will mount on the new highways and skyways to the Heartland across both the Alaska- and Greenland-Iceland bridges. While we are aware of the climatic barriers which always will hamper an American or Soviet expansion northward and a large-scale colonization and land utilization of their Arctic possessions, we cannot eliminate the northern links from the blueprints of a new world view. These links are represented not only by skyways but also by new inland communications and by sea lanes, opened by weather

stations, planes, and icebreakers. Furthermore, there are new inland roads in the making which will connect both the Heartland and North America with China. The old front doors of China, in Hong Kong and Shanghai, are slowly disintegrating with the passing of colonial imperialism.

Mackinder's citadel of land power still stands—and mightier than ever. And it is not merely the Heartland quality of its land mass that accounts for its leading role in today's world theater. Equally important are the wealth of its resources and the human intangibles which make a nation great. In the political and economic geography of a shrinking world, location is not a static element. Its value changes constantly. The United States and the Soviet Union are about to revise their politico-geographical contacts; the northward course of both nations accounts for some of the major changes. Equally the relationship of China and the U.S.S.R. is expected to change radically. The long inland frontier between these two nations will grow in significance in the next few decades, and stimulating or contagious ideas will not be halted by ancient walls. Such contacts will affect the rest of the world and particularly the role of the Heartland.

Finally, there is the human factor: the differences in vitality among the great nations which are paramount among the factors which will change the relations of the Heartland to the rest of the world. The balance of man power is shifting. At present, the shift favors the vigorously growing nations within the U.S.S.R.—and will continue to do so for decades to come.² This trend but underlines the significance of Mackinder's Heartland vision. Yet a future cycle in the evolution of a world population that is growing much too rapidly—growing in spite of the appalling blood sacrifices of the war—will make the demographic problems of new Powers, of China and India, a world problem. Moreover, it will affect deeply the power position of the Heartland people and of the western nations. I am afraid that Mackinder's new balance of power doctrine, a world divided into two equal, there-

² It is emphasized by the fact, stressed by Ellsworth Huntington, that biological inheritance has produced qualities in the Heartland people which compensate for its climatic handicaps.

fore free, hemispheres of one billion human beings each, is a structure built upon shifting sand. The weakness of Mackinder's doctrine does not lie in its emphasis on the citadel of land power as pivotal in world affairs. It lies rather in the attempt to construct a balance of power formula which can be applied permanently to the relationship of the Heartland and the rest of the world. Since Mackinder first started out to demonstrate how geographical sense is essential in acquiring a valid world view, new pivot areas have evolved; and still others will emerge. The growth of American power particularly has prompted Mackinder to revise his formula. Other areas and their peoples will come of age, and new lines of communications will transform international relations. No balance of power thesis can solve permanently the geopolitical problems of tomorrow. That is the vital lesson which Mackinder himself taught us. The world's nations have realized that they henceforth must live "in a closed system in which they can do nothing of which the repercussion does not come back upon them from the very antipodes."

6

MARGINAL AND INTERIOR LANDS OF THE OLD WORLD

By C. B. FAWCETT

The contrast between these geographical regions has again become a live factor in the world, because of the development of the Soviet Union. It was realized, and proclaimed, as a prime factor in history by Mackinder in an address to the Royal Geographical Society as long ago as 1904. Again after World War I he published a book on its implications for us. This was *Democratic Ideals and Reality* (1919). It was hardly noticed in Britain or America—the prophet had no honor in his own country; but the enemy took it to heart, and it became a basic book for the development of German *Geopolitik*.

The Second World War awakened us to these facts. The book was reissued in 1943 and sold widely. Mackinder supplemented it by a further study in *Foreign Affairs* and in *Compass of the World*. In compensation for the long neglect of his warnings there is now a tendency towards an uncritical acceptance of some of the earlier inferences from his work. So it is well to consider them with the critical attention which a work of such importance merits.

Mackinder based his work on two fundamental facts: (1) the prime importance of mobility in all human affairs, and (2) the

C. B. FAWCETT, born Staindrop, county Durham, England. University College, Nottingham, and University of Oxford. Professor of Geography, University of London, since 1928.

Author of *Frontiers*, 1918; *Provinces of England*, 1919; *A Political Geography of the British Empire*, 1933, *The Bases of a World Commonwealth*, 1941.

range of two chief forms of mobility, by water and by land, which have been dominant since the beginning of civilization.

From this viewpoint the marginal lands, his "Coastlands," are those which are accessible to the shipmen, who early sailed from beach to beach or harbor to harbor round the west, south, and east coasts of the Old World, and went far up all its navigable rivers. The interior lands are those inaccessible to the shipmen, including the large areas of inland drainage, from which no rivers reach the sea, and the coasts and rivers of the Far North (which are unnavigable part of the year). Here in the Old World the lands of continental (inland) and Arctic drainage form Mackinder's "Heartland." (See Fig. 7.)

On his Heartland, Mackinder indicates a second region of accessibility—the lands accessible to the "horsemen," the nomadic herding peoples of the steppes of Eurasia, which form the "Land of Grass." The Land of Grass is not coterminous with the Heartland. It extends farther to the east, into northwest China and Manchuria, and to the west, over most of Ukraine and into the Danube valley. It has been said to reach from Vienna to Peking. To north and south it is less extensive than the Heartland, since the latter includes the Siberian forests and tundra as well as the Tibetan highlands and the deserts of Central Asia, which are not parts of the Land of Grass. Yet until the recent Russian colonization of Siberia the vast area which is common to these two regions was the chief inhabited part of both of them, so that they were largely identical as human regions.

To east and west the Heartland includes parts of lands transitional from it to the Coastlands (see Fig. 7). These are inaccessible to the shipmen, because their waterways belong to inland drainage basins or are cut off by a break of navigation. The western one includes the Volga basin. This makes Russia the chief area of mingling and conflict between interior and marginal influences, as witness her relations to Varangians and Tatars, who reached the country as shipmen and as horsemen respectively. The eastern borderland is a mountainous zone of



Fig. 7. Mainland and the development of the concept of Heartland, shown in relation to deserts and grasslands (orthographic projection).

difficult communications and scanty population, and so of much less importance.

The most important difference between marginal and interior regions is that in their water supply. So look at a rainfall map of

the world. Perhaps the most outstanding feature is that the large continuous areas of considerable precipitation are marginal regions. Except within about 15° of the equator practically all the land which is as much as 1,000 miles from the sea is arid or semi-arid; and no large area so far inland receives as much as 20 inches of rain per year. Also over these interior lands the rainfall is everywhere unreliable, as well as in general insufficient for agriculture.

There is one marked partial exception to these broad generalizations. In the north of Mainland¹ the west winds sweep over the Great Lowland to bring a considerable rainfall as far inland as the Altai Mountains. Here the area with a rainfall which is, in these latitudes, generally sufficient for agriculture, though less than 20 inches per year, extends in a narrow belt, whose axis is near 55° N lat., from the west marginal region eastward as far as Lake Baikal. At its eastern end this area is about 4,000 miles from the open Atlantic Ocean, along the track of the prevailing winds; and it is from 1,000 to 3,000 miles distant from such lesser seas as the Baltic, the Black, the White, and the Caspian, as well as from the seasonally open waters of the North Polar Sea. East of Baikal it is nearly approached by the area of summer rain of the Monsoon Coastland.

On Mainland the arid areas of the interior link up with those of the northern tropical desert zone to form the belt of what Herbertson called the Midworld Deserts. This is a continuous belt of deserts and semideserts, generally about 1,000 miles wide, stretching from the Sahara and Arabia through Iran and Central Asia to the Gobi and beyond. It is a wide zone of "regions of privation," only very thinly peopled by nomads except in some of its oases. Thus it forms a wide frontier of separation, the "Great Divide," between the well watered and populous marginal region of "Europe" to the northwest and the similarly well watered southeastern and southwestern marginal regions of Main-

¹ The term "Mainland" is synonymous with Mackinder's "World Island." Dr. Fawcett prefers it because "it is literally correct, and because the word 'island' always suggests some area smaller than a continent"—THE EDITORS.

land, in Monsoon Asia and Negro Africa. This barrier zone occupies a large part of the great interior region.

Mackinder called the Eurasian portion of this great interior region the Heartland—a name which is now widely used. He has given two definitions of the Heartland. The first is “the regions of Arctic and Continental Drainage in Eurasia.” This is based solely on facts of physical geography; and it is quite definite. It was soon extended to include all the plateau lands of High Asia, which are clearly inaccessible to shipmen. So far it is a fairly simple concept, which can be clearly represented on a map. (See Fig. 7.) Its western boundary is the sinuous line of the water parting west of the Volga, through the center and north of Russia, a line of little significance in human geography.

Mackinder based his second definition not on accessibility but on military control. His shipmen and horsemen gave place to sea power and land power: so his Heartland became “the region to which, under modern conditions, sea-power can be refused access.” This widened “strategic Heartland” is “the region from which a locally dominant land-power can exclude any sea-power.”

On this second definition Mackinder extends his strategic Heartland westward to include the areas drained to the Baltic and Black Sea basins, except for the Upper Danube, and Asia Minor except its Mediterranean coasts. The area between his two boundaries is part of the transitional region between the interior and the west marginal regions. It is of interest to note that between the Black and Baltic seas, this boundary is close to the present western boundary of the territories now occupied by the Soviet Union and its client states. It is also nearly the boundary between Herbertson’s west marginal and interior cool temperate regions in Europe.

This second, strategic, basis is evidently a changing factor. During the Napoleonic Wars the sea power of Britain could and did penetrate the Baltic Sea to Kronstadt, and force its way through the Dardanelles to Constantinople (Istanbul). In World War I, 1914–1918, the sea power did not attempt to force a way into the Baltic, and failed in its attempt to force the passage of the

Dardanelles. Thus there was between those wars a diminution of the area controlled by sea power and a corresponding increase in that controlled by land power.

It may well be noted here that during the Second World War, 1939-1945, the sea power had to fight hard to keep control of the Mediterranean. It is clear that in another war the balance of the two might be so changed that the sea power could be excluded from that inland sea. In that case the boundary of the strategic Heartland would be drawn through the defiles, then controlled by land power, at the Danish Straits, Gibraltar, Bab-el-Mandeb and Ormuz; so that what I have elsewhere called the "Inland Seaway" through Mainland would be entirely controlled by land power, and inaccessible to the oceanic powers. Would that mean a further extension of the strategic Heartland to include practically all mainland Europe, Arabia, and Africa? It is at least clear that the strategic definition does not give a permanently fixed area.

The physical Heartland is the great interior region, in contrast to the marginal regions which surround it. The strategic Heartland spreads far on to the western of these marginal regions; and this overlapping transition region is its more important section, exceeding the interior region in natural resources and in population.

No comparable extension of the Heartland can occur on its southern and eastern margins. There its borderlands are narrow. The fringing seas of east Asia, unlike the inland seas of Europe, open to the ocean through many and wide channels. In the east there are no maritime defiles comparable to those at the Danish Straits, Gibraltar, and the Dardanelles. All the East Asian seas have many ways to the ocean. They cannot be closed to the sea Powers, as the Baltic and Black seas have been closed.

Next let us compare our interior region with the marginal regions in respect of the general distribution of population. From a first glance at a world population map it is clear that all the large interior regions are very thinly peopled. Most of them, as we have noted, are arid or semiarid, and so are capable of pro-

ducing only small quantities of food in proportion to their area. The great majority of mankind dwells in the marginal regions, which are the fertile food-producing areas. These include China and India, Western and Central Europe, Eastern North America, the islands, and the inhabited lands of the southern continents.

Within the Heartland, as it was first defined, the Volga basin is the only large well peopled area. But the greater part of the Volga basin is, in climate, vegetation, and population density, part of the western transition region rather than of the interior, the true Heartland. Elsewhere there are a few populous cases. There are now agricultural settlements in western and central Siberia, precariously balanced between the too short summers to the north and the uncertain rainfall to the south. There are the beginnings of what may become populous industrial areas in the Ural and Kuznetsk mineral regions, and a fairly populous agricultural region on the narrow loess belt now threaded by the Turk-Sib railway. But all these taken together contain as yet probably fewer than 100,000,000 inhabitants, less than 5 per cent of the world's population.

So much for the physical Heartland. But Mackinder's strategic Heartland, including East and part of Southeast and Central Europe, is much more populous. The total population of this wider Heartland is between 300,000,000 and 400,000,000—about a sixth of the world's population. More than half of these are in the Soviet Union; and more than half of the remainder are in its client states and occupied territories. But more than three-fourths of the total are in the wide transitional borderland between the interior and west marginal regions.

It is well to note that each of the three populous marginal regions of the Old World—viz., the Far East, India, and Europe—is more populous than even this wider Heartland. West-and-Central "Europe" is comparable to it in total population, while the fourth major populous region of the world, in Eastern North America, contains as many people as the inner (physical) Heartland and has probably greater natural resources and population capacity.

The most important differences between the interior and the marginal regions are climatic. I need only refer to three of these: (1) The interior is relatively arid. (2) The interior is characteristically a land of great annual range of temperature, with cold winters and hot summers. (3) There is a great difference in the relative variability of the weather.

The last difference may be summed up by saying that in the northern mid-latitude zone the marginal regions, particularly the west marginal region, have generally variable weather while the interior has generally monotonous weather with long periods of uniform conditions—a monotony which has a numbing effect on human beings, in contrast to the stimulating effects of frequent small changes.

Protection against cold has been a vital factor in the human advance. Long ago the discovery of the control of fire enabled primitive man to “carry the smoke of his fires like a banner of conquest into the waste and desolate places of the earth.” Before that discovery man must have been limited in his range to areas where there were no long spells of severe cold to reduce his vitality.

In our comparison of interior and marginal regions these considerations lead us to note that the long cold and dry winter which characterizes all the interior lands of mid-latitude is a handicap on human development in many ways. A much greater expenditure of energy is required to carry on a modern civilized life through the winter in Canada or Russia than in Florida or India. When the outdoor temperatures fall to freezing point the house or factory can be kept at a comfortable temperature only if it is built for the purpose and supplied with artificial heating. Such a building demands a much greater investment of knowledge and skill, of labor and material, than the flimsy unheated house or shed which can provide adequate shelter in a hot climate. Similarly a greater amount of work and material is needed to provide suitable food and clothing for a cold winter.

It is only in the last hundred years, and mainly in this twentieth century, that modern developments in building and in central heating have made it possible for the mass of the people to be

fairly comfortable and efficient indoors during a really cold winter. It is only in the same period that a white population has spread into the interior lands of North America and Siberia. It is certainly true that a long cold winter is still, and is likely to remain, a difficult time for the maintenance of human vitality and of civilized life. In this respect an interior region is a less favorable environment for man than a marginal region, in the mid-latitude zones. The great interior Heartland is, because of its long, cold, and very dry winter, a "region of lasting difficulty." The difficulties may, in time, be overcome; but none the less they form a permanent handicap on the peoples of the interior.

In view of these differences it is not surprising that nearly all the great migrations of recorded history have had an outward trend from the great interior, from the lands of cold winters and of drought, towards the fertile marginal regions where these environmental difficulties are less insistent or even absent.

During the latter half of the nineteenth century there was a brief temporary reversal of this trend, and a considerable migration towards the interior of North America. Russia had a similar movement two generations later, in the migration into Siberia. Where such a migration has taken a population beyond the range of the rain-bearing winds from the ocean the settlement is not likely to be lasting. There has already been some retreat from the semi-arid lands in North America and similar regions of difficulty.

As we have already noted, the marginal regions contain all the major populous regions; and there seems to be little likelihood of any change in this relative distribution. In fact the chief pressures of population have long been, and still are, outward from the interior lands. The thinly peopled areas tend to lose population because of migration into the more densely peopled lands.

The Russian expansion over Siberia from the sixteenth to the nineteenth century was not by agricultural colonies. It was a spread of fur hunters and traders, like that which opened up the Hudson Bay lands. The chief route used was that of the water-

ways in the forest zone. This route is near 60° N. lat., well to the north of the steppes. It was not till the early years of the twentieth century that a railway was built along the southern margin of the forest in the zone of possible agricultural settlement. Since then there has been a considerable migration into this zone between dense forest and open steppe. But it suffers what are probably the coldest winters under which civilized man has yet attempted to dwell. It has also short summers with a low and somewhat variable rainfall. So the success of the colonization is not yet assured, though it is backed by the might of the Soviet Union.

One other contrast between the marginal regions and the interior remains to be stressed. It is that in their political geography. The interior is now almost unified. Nearly the whole of it is in the Soviet Union. Most of the rest is clearly within the sphere of influence of that Power, except for Sweden, Turkey, Persia, and Afghanistan, which are buffer states in its border zone. The Heartland is approaching political, economic, and social unity, under the control of the Power whose base is in east Europe, the transition region between it and the West Marginal Region. The one deep intrusion of a marginal Power into the Heartland is the Chinese province of Sinkiang; and this may be only nominally Chinese.

There is no comparable unification of the marginal lands. India's wide political union (imposed by a foreign Power) has been split, and the Far East is divided, while both Europe and the Americas are mosaics of states. In the marginal lands, the two Great Powers are the British and American Commonwealths. Viewed from Moscow, these seem to be regarded as an Anglo-American Union. Look at the distribution of their lands on the map, and see how they are clearly marginal Powers. So are France and China.

The real interior region, the inner Heartland of Mackinder, is and must remain a "region of lasting difficulty" for man. Thus it will probably remain a less populous region than any one of the present four major populous regions, three of which border it.

From two of these, India and the Far East, it is separated by the great divide of the Mid-World Desert Belt. (See Fig 7) But it merges imperceptibly into the third, Europe, through the broad transitional region of East Europe, within which there is no natural frontier barrier.

In his emphasis on the strategic importance of the Heartland Mackinder wrote:

Who rules East Europe commands the Heartland
Who rules the Heartland commands the World Island
Who rules the World Island commands the World

The truth of the first of these dicta has already been demonstrated. During the modern period, since the sixteenth century, Russia has attained effective command of the Heartland from her base in East Europe.

The second dictum is much less certain. The Heartland is not, and cannot be, in itself the home of sufficient man power to command the marginal regions of the World Island (Mainland). In the past there have been extensive conquests in the marginal lands by invaders from the Heartland—Hun and Tatar in East Europe, Mongol in all the marginal lands, Manchu over China, Persian, Afghan, and Mogul in India. But no one of these was long maintained from the Heartland. Those empires which lasted did so because they succeeded in establishing a firm base in the productive and populous marginal land, and thus were able to maintain an adequate man power.

The reaction to such invasions led the Empires in the marginal lands to try to gain control of the Heartland. No invasion of the interior from India had any success; the name of the Hindu Kush² Mountains bears witness to the fate of Hindu armies. From China there were several expansions into the Heartland. These established Chinese suzerainty over a large part of Central and High Asia; but there was no successful extension of Chinese civilization beyond the Great Divide. There were also, from time to time, similar penetrations from the southwest; one of these

² From the Persian, interpreted as *Hindu killers*. Etymology doubtful.

established Mohammedanism in many of the oases, and in the northwest borders of China; but none of them established a stable political Power.

The one effective conquest of the Heartland is that which has been made from the west by Tsarist Russia and the Soviet Union in the modern period. The absence of physical barriers on this side made it possible for the East European Power to spread steadily eastward. Here there is no barrier zone of great highlands, and colonization could advance gradually along the northern edge of the deserts. But the man power of this Empire is not in the Heartland. It is in the populous lands of East Europe.

So the Heartland has not "commanded" any one of the marginal lands for any length of time. "Who rules the Heartland" does not, in virtue of that rule, "command" any one of the marginal regions; much less, all of them. For it is less populous, and has less population capacity, than any one of them. If they were united the Heartland power would be hopelessly outnumbered. Even the union of Heartland and East Europe, as it is at present united in the Soviet Union, is not a sufficient base, though it does give the possibility of organizing a Power which might make a bid for world conquest from a far wider and stronger geographical base than Germany had, and with all the advantages of a central position.

But, if the interior Power were to extend its rule over the rest of Europe, then the combination of Europe and the Heartland—i.e., an extension to the widest strategic Heartland—would give resources sufficient to "command" the other marginal regions of Mainland, and so to rule the "World Island." For such a Power would have two-thirds of the area, far more than two-thirds of the mineral and industrial resources, and perhaps two-fifths of the population of Mainland.

Since Mainland includes two-thirds of all the available land, and more than three-quarters of mankind, the third of Mackinder's dicta—"Who rules the World Island commands the World"—is as well founded as his first. In fact it is equivalent to asserting that a complete union of all "Europe" could effectively dominate

the rest of the World. Since Europe, in the wider extension of that term, is the largest, the most populous, and the richest in natural resources of the four major human regions of the world, this dictum is probably correct. But, though such a World Power would control the Heartland, it would not be based on that Interior region.

7

THE SOVIET UNION AS A SEA POWER

By ROBERT J. KERNER

The rivers of the U.S.S.R. are the keys to the geographic and economic unity of that country. In the past they offered the Russian people the opportunity to utilize them as roads to the seas. When the Muscovite state was landlocked, they helped to create the Russian urge to the sea—a centuries-old national longing—because its independence and security depended upon access to the seas.¹

The major river systems of the Soviet Union, for the most part, flow to the north (the Northern Dvina, Pechora, Ob, Yenisei, and Lena) and to the south (the Dnieper, Don, and Volga). There are three important exceptions: the river systems of the Western Dvina and the Neva, which empty westward into the Baltic, and the Amur, which pours eastward into the Sea of Okhotsk, and the Sea of Japan.

¹ See Robert J. Kerner, *The Urge to the Sea The Course of Russian History* (Berkeley, Calif., 1942), *The Russian Adventure* (Berkeley, 1943), and "Russian Naval Aims," *Foreign Affairs*, Jan., 1946, pp. 290-299.

ROBERT J. KERNER, born in Chicago, Illinois. A.B. 1908, A.M. 1909, Chicago; Ph.D., Harvard, 1914, LL.D., Omaha, 1937; Litt.D., Park College, 1938. Sather Professor of History, University of California; General Editor, The United Nations Series of the University of California Press; President, Pacific Coast Branch, American Historical Association, 1947-1948.

Author: *Slavic Europe*, 1918; *Northeastern Asia*, 2 vols., 1939; *The Urge to the Sea*, 1942; *The Russian Adventure*, 1943, and numerous other books and articles. Among the latter. "Russian Policy in the Far East," *Yale Review*, Autumn, 1945; "Russian Naval Aims," *Foreign Affairs*, January, 1946.



Fig. 8. The Soviet Union's naval frontiers (orthographic projection, centered on 90° E, 55° N.). The two panels show the areas covered by Fig. 9, p. 106 and Fig. 10, p. 109.

The north-flowing rivers lead to the only body of open water, the Arctic, which permits limited sea communication by the Siberian sea route between north European Russia and the Pacific. This ocean and its river systems are ice-locked for a considerable part of the year (except at a few ports such as Murmansk and Petropavlovsk); and navigation thereon during the rest of the year is restricted and remains precarious from the

military point of view, even with super-icebreakers yet to be constructed and with the assistance of aviation and modern communication systems. Moreover, the Baltic, Black, and Japan seas are inner seas with outlets controlled by foreign states; and of these the Soviet coasts of the Baltic and Japan seas are in part ice-locked for several months of the year. From this point of view the recent additions of Petsamo and Porkkala Udd from Finland and Kaliningrad (Königsberg) from Germany increase the opportunities for ice-free naval bases on the Arctic near Murmansk and on the Baltic. The ice-free naval base of Port Arthur, facing the Yellow and East China seas, definitely gives the Soviets a vital position in the center of the Far Eastern scene, although it is flanked by Korea, Japan, China, the Ryukyus, and the Philippines. Its effectiveness also depends upon Soviet control of Manchuria. Only the lower reaches of the Dnieper, Don, and Volga and the shores of the Black and Caspian seas are ice-free. From this it will be seen at once what general restrictions climate and geography impose upon the sea power of the U.S.S.R.

A hydrographic map of the Soviet Union would reveal how easy it is to portage from one river system to another. It would show the basis of an extensive system of water transport—ice-free for about half the year—which could be created by the construction of canals running through the portages, thus linking the river systems into a unique network covering about three-fourths of the entire Soviet Union. In part this has already been carried out in European Russia; and there are plans to complete the joining of the river systems by other canals, as in the case of the Volga and the Don, and to raise the water level of some of them by building dams and locks for inland transportation by seagoing vessels. An illustration of this is the Moscow-Volga canal, which is reported to be eighteen feet deep and which has allowed seagoing vessels to wharf at Moscow. The transit of light warships and merchants vessels from one sea to another—for about six months of the year—may some day play a part in the story of the power of the U.S.S.R. and should not be overlooked.

The Soviet Union is the largest politically continuous land mass



Fig. 9. Soviet naval operations in the west are hampered at all times by constricted waters and seasonally by ice. (See Fig. 11, p. 126, for the inland communications system.)

in the world and, as such, is the strategist's dream of the ideal land power. It is the heartland of the geopoliticians. It can truly trade space for time. It faces the Polar realm in the north, Europe in the west, the Near and Middle East in the south, and the Pacific in the east. Its position as the greatest land power offers and, in fact, impels an interest in all these vital areas of world events in a world which is already small and is becoming smaller decade by decade. In the past, simultaneous participation by Russia on a scale commensurate with the protection of its national interests in all four directions was not possible because of her backwardness. The Soviet Union is still, in fact, an underdeveloped continent. It has not caught up in internal development, in its basic production, or even in terms of its own defense requirements on the indicated four fronts, with the leading Powers, which are much smaller. It will take decades for the U.S.S.R. to catch up with its size. This accounts primarily for Russia's defeats in the Crimean War, the Russo-Japanese War, and the First World War. This fundamental fact produced the precarious situation in which the Soviet Union found itself in the Second World War between Germany and Japan, and in which it suffered extensive devastation and loss of man power. Unless the atomic bomb, air power, and the submarine totally revolutionize warfare, it may be concluded that an isolated U.S.S.R. cannot for years fight a successful world war. Her diplomacy will have to make alliances with other Great Powers, if such are available, no matter who rules her people, until she catches up with her size. This will be all the more urgent if Germany and Japan come back as armed Powers.

These general considerations of the present position of the Soviet Union as a land and sea Power lead to the conclusion that, as a land Power, she is at a disadvantage measured in decades, if not longer. As a sea Power, she is at a twofold disadvantage. She is definitely restricted not only by her present relative weakness as a land Power, but by the heavy handicaps of climate and geography. The extent to which Soviet air power and new long-range submarines, with a Soviet atomic bomb, can modify this situation in the future is probably considerable, but is still a

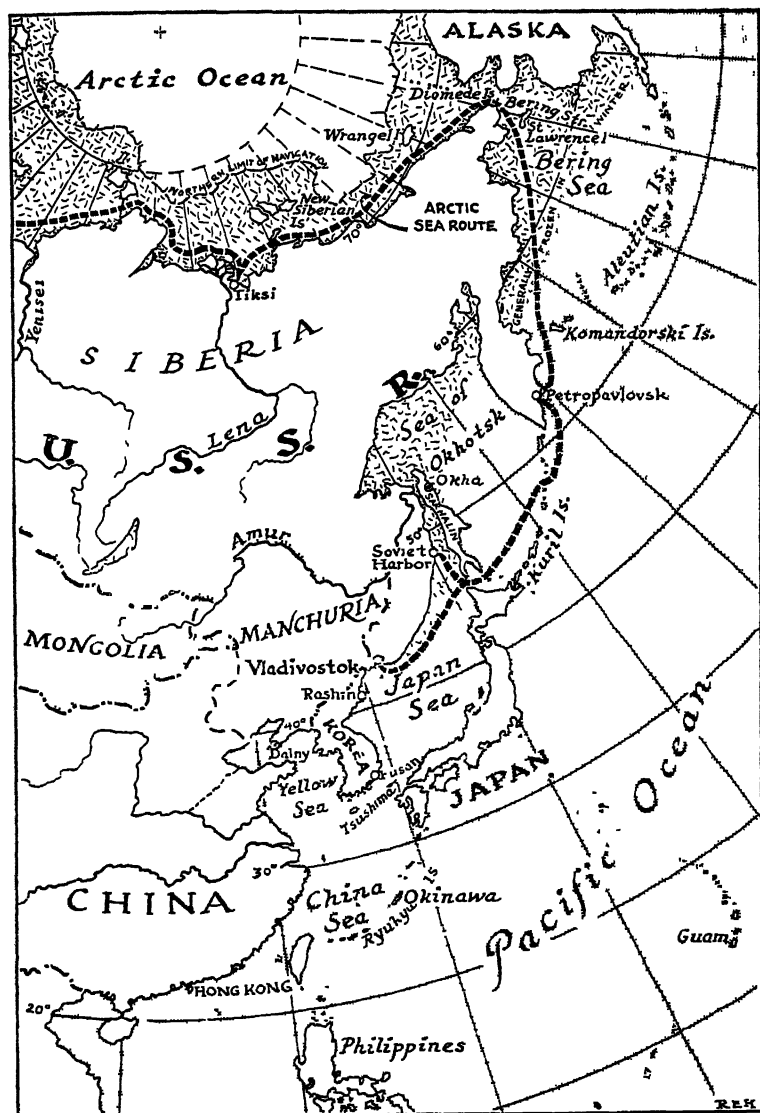


Fig. 10. In the east, the Soviet Union has two ice-free areas for basing naval operations—Kamchatka and southern Sakhalin; but neither of these has overland connection with sources of supply.

matter of guesswork. However, this should not be overlooked in the following account. Also a "fleet" might be composed largely of new gigantic submarines.

In analyzing in detail the handicaps which geography imposes on the U.S.S.R. as a sea Power, one must keep in mind the historical fact that, if Spain, France, and Germany were at a twofold disadvantage toward Britain, the Soviets are at a fourfold disadvantage. These continental naval Powers had to think first of their position among other Powers on the continent. The position had to be a dominant one, or the policy of balance of power applied by the dominant sea Power would limit its effectiveness on the seas. Spain and France, by British possession of Gibraltar, were compelled to maintain divided navies. Germany, because of Denmark (even after the Kiel Canal was built), was afflicted in the same way. The Soviet Union is almost obligated to maintain four separate navies. in the Arctic, Baltic, and Black seas, and in the Pacific. Only the Arctic and Pacific fleets have the possibility of union, and that under the restricted and precarious conditions already indicated. The Soviet Union is, therefore, at the greatest disadvantage when compared to the other sea Powers. The Red Navy is distributed and apportioned in four seas in accordance with the importance of each in Moscow's security and commercial interests.

When each of the four possible scenes of Soviet naval activity is examined, further difficulties become evident.

At first it would seem natural to conclude that the greatest naval strength of the U.S.S.R. should be concentrated in the Murmansk area, which is ice-free. Its chief advantage would seem to be that it fronts on an open sea and has limited access to the Pacific by the Siberian sea route. Although 700 miles from Leningrad, it is still closer than Petropavlovsk to a center of population and industrial activity; and it has both rail and water communication, even though precarious and restricted. When, however, the disadvantages of the Murmansk base are enumerated it becomes less likely that the Soviets will base their strongest fleet of the four here. That a fleet stronger than any heretofore would

be allocated to this area, is certain, as a result of the experiences of the Second World War, when the Allies sorely regretted that Moscow had not done so. From within the Union, Murmansk is reached in two ways, by the Murmansk railway and by river and canal and the White Sea during half the year. Secure operation of the isolated Murmansk railway depends upon Soviet predominance of at least Finland, if not also Sweden and Norway, and upon control of the northern Baltic. The road to the Atlantic from Murmansk is flanked by the Spitsbergen Archipelago (Svalbard) to the north, Norway to the south, and Iceland to the west.

The Soviet Union negotiated (1944-1946) a provisional agreement with Norway on Spitsbergen which the latter's Parliament rejected on February 15, 1947, by a vote of 101 to 11. In brief the Union demanded joint defense of the archipelago, in contravention of the Paris Treaty of 1920, which, in awarding the Spitsbergen Archipelago to Norway, had demilitarized it, and to which the Union had adhered in 1935. It asserted that the treaty was "outmoded" and "no longer corresponded to the existing situation," and had been drawn up and signed "without the knowledge of the Soviet Union and without its participation." It indicated, moreover, that the treaty did not at all take into account the security of the Union in the north, nor its important economic interests in the Archipelago. The Red Arctic Fleet and the northern Soviet area had been supplied with coal from Spitsbergen, where two-thirds of the prewar annual production of some 600,000 tons was mined by Soviet organizations. Britain and the United States have indicated that they expect to be consulted in any changes in the treaty of 1920. In certain quarters the demand by the Soviet Union for naval bases in these islands (one of which, Bear Island, it claims) is viewed as a bid for rocket or atomic bomb air bases for operation in the polar regions.

It is clear that secure access to the Atlantic by the Red Navy depends first of all upon the elimination of any possibility that Spitsbergen may be used by any other Power. However, there remain Norway with its long, fiorded coast and Iceland. The

position of Norway will in all probability be determined by its close economic and commercial relations with Britain and the United States. The agreement between United States and Iceland of October 7, 1946, returned Keflavik Airfield to Iceland and provided that American military and naval personnel would be withdrawn from Iceland within six months. The Icelandic Communist party (a 10 per cent minority) had agitated in Parliament and in the Federation of Icelandic Trade Unions for the cessation of the use of Iceland as an American air base. In spite of this arrangement, it is evident that Soviet access to the Atlantic from Murmansk is not secure. Considered from all points of view, a decision to base the most powerful Soviet fleet here would be questionable.

In the Baltic the Soviet Union has measurably improved its position over the period from 1917 to 1939. The Baltic to White Sea (Stalin) Canal, 141 miles long, has been restored. It is expected to facilitate the transfer of light war vessels from one sea to the other. Lithuania, Latvia, and Estonia have been annexed; a greater area for the defense of Leningrad beyond Viborg and the lease of Porkkala Udd as a naval base have been acquired from Finland, and the Kaliningrad (Königsberg) area from Germany. The coast line of Poland on the Baltic has been much extended. The Aland Islands, however, remain demilitarized and under Finnish sovereignty. From this it is seen that the Soviet Union is dominant in the northern and eastern Baltic and is likely to be dominant in the Baltic as a whole if Germany remains disarmed. With the ice-free Kaliningrad area as a naval and air base, it will certainly be in a stronger position to ward off invasion than at any previous time in history, and all access-to-the-sea and defense requirements of the central and northern U.S.S.R. may be said to have been fully looked after.

It was the historic policy of Russian naval strategy, from 1780, to close the Baltic to the navies of other than littoral Powers and to secure the command of that sea. The Soviet Union, in the period from 1918 to 1945, followed the policy of Tsarist Russia so far as it could. And now, as a result of

the Second World War, the Soviets are the sole surviving naval Power in the Baltic and will remain so as long as Germany cannot rearm.

A statement of exact Soviet aims in regard to the entrance to the Baltic and to the Kiel Canal has not been publicly formulated. Naturally these might include control of both. During the critical German-Soviet negotiations late in 1940 or early in 1941—when the issue was alliance or war—it is reported that Moscow asked for a base in Jutland at the entrance to the Baltic, thus indicating that it wanted that while Germany had the Kiel Canal. After the German collapse, the British occupied the Kiel Canal area, and the Soviet Union the Island of Bornholm which, however, it evacuated on October 6, 1946. It is to be expected that the Union will raise the question of the control of both the entrance to the Baltic and of the Kiel Canal in the negotiations regarding the German peace treaty. In this area agreement with Britain is indispensable, and the size and composition of the Red fleet here will depend upon the actual character of future Anglo-Soviet relations.

The command of the Black Sea and the domination of the Turkish Straits have long been objectives of Russian diplomacy and naval policy. These objectives have required extensive Russian influence in the Balkans and in the Near and Middle East, in the eastern Mediterranean and in the Indian Ocean. In recent days the requirements may be illustrated in the actions of Soviet diplomats in an arc stretching from Yugoslavia to Iran, but always the core of the policy is the ice-free Black Sea and the Turkish Straits, through which the Russian economic life line passes into the Mediterranean. It, therefore, represents a vital national interest.

The Soviet Union is the greatest Power near the Yugoslavia-Iran arc. For secure access to the Mediterranean it has to restrict Germany in her aspirations to the south and to be predominant in Czechoslovakia, Hungary, Bulgaria, Yugoslavia, Albania, Greece, Turkey, and Iran. Except for Greece, Turkey, and Iran, where Britain and the United States prevented Soviet

control, it achieved a considerable part of this objective as a result of the Second World War. Since March 21, 1945, the Soviet Union has demanded a pro-Soviet solution of the Turkish Straits problem through joint defense with Turkey of that waterway—in other words, Soviet bases in the Straits. It offers strong opposition to the freedom of navigation of the Danube, which it has endeavored to control in order to exercise pressure on the Danubian area and prevent any interference with its domination of the Black Sea. With the acquisition of Bessarabia, which extends to the mouth of the Danube, the U.S.S.R. is in a most advantageous position with reference to that river. In the Rumanian Peace Treaty (Part VII, article 36) the United States and Britain were able to include the provision that “navigation on the Danube shall be free and open for the nationals, vessels of commerce, and goods of all States, on a footing of equality in regard to port and navigation charges and conditions for merchant shipping.” However, an international commission with the right to station light war vessels in the delta of the Danube, as in the past, was successfully opposed by Moscow.

At the Conference of Potsdam (July, 1945) the three Powers agreed that the Convention of Montreux (1936), which gave control of the Straits to the Turks, should be revised. Later developments indicated that they disagreed on how it should be revised. In the war of nerves which accompanied the tension created by Soviet demands, it was revealed that they included also cession by Turkey of the former Armenian-inhabited districts of Ardahan and Kars (ceded to Turkey by the freely signed Soviet-Turkish Treaty of 1921). The Great Powers and Turkey were agreed upon three of the five main points raised by Moscow: that the Straits should always be open to the passage of merchant ships of all countries; that they should always be open to the passage of warships of Black Sea Powers; and that passage of warships of other Powers should not be permitted, except in cases especially provided for. Opposed by the United States, Britain, and Turkey were two other proposals of Moscow: “The

establishment of a regime of the Straits, as the sole sea passage leading from the Black Sea and to the Black Sea, should come under the competence of Turkey and other Black Sea Powers," and "Turkey and the Soviet Union, as Powers most interested in and capable of guaranteeing freedom to commercial navigation and security in the Straits, shall organize joint means of defense of the Straits for the prevention of the utilization of the Straits by other countries hostile to the Black Sea Powers."

In favor of the Soviet stand was the fact that the Straits in two World Wars were closed to Russia and its allies: in the First, by Turkey's alliance with the Central Powers; in the Second, by the military weakness of Turkey as a neutral. Military assistance to Russia from the Allies had to go by the dangerous route to Murmansk, where Russia was weak navally, or by the long route to Iran or across the Pacific and Siberia. Against the Soviet stand was the fact that Moscow encouraged Turkey to secure control of the Straits at Montreux (1936) by modification of the convention of Lausanne (1923), to which the Soviets had adhered. Now ostensibly Moscow was seeking joint control—but actually Soviet control of the Straits. This, so the British Government held, would really put Turkey "under foreign domination."

What Britain and the United States feared was that it would mean Soviet domination of the eastern Mediterranean, through which the life line of the British Empire ran. Both stood for an international solution and stated that the next step should be the calling of the international conference some time in 1947.² Unless unforeseen developments take place, there is likely to be an international solution of this problem—perhaps with armed forces (ground, sea, and air) of the Great Powers controlling the Straits, among which the U.S.S.R. may be allowed larger contingents.

² See Robert J. Kerner and Harry N. Howard, *The Balkan Conferences and the Balkan Entente, 1930-1935* (Berkeley, 1936), especially chap I; Harry N. Howard, *The Partition of Turkey. A Diplomatic History, 1913-1923* (Norman, Okla., 1931), *The Problem of the Turkish Straits* (Washington, 1947), and "The United States and the Problem of the Turkish Straits," *Middle East Journal*, Jan., 1947, Robert J. Kerner, "Russian Naval Aims," *Foreign Affairs*, Jan., 1946

In view of Soviet pressure against Turkey, the evidence of Moscow-inspired Yugoslav, Bulgarian, and Albanian guerrilla activities on and inside the Greek frontiers, and the inability of Britain to hold its position in Greece and Turkey, President Harry S. Truman promulgated a policy since referred to as the Truman Doctrine (March 12, 1947) in which he stated that "it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures."

In any event the Soviet Union will control the Black Sea, and will have a larger share in the destiny of the Straits than ever before. For defense of its Black Sea interests this will be sufficient. The Black Sea fleet will probably be the largest of Moscow's four fleets for some time, because it will be called on to protect that country's life line in an area of important changes in the days to come.

Thus in the Baltic and Black seas Soviet naval policy may be described as that of the closed sea—*mare clausum*.

Admiral Yumashev, after recounting Soviet naval exploits in the Second World War, declared, "Once more Soviet Russia is a great Pacific power and the Pacific fleet has free access to the Pacific Ocean." ³ The main Soviet interests in the Far East center on secure access to the Pacific along the Trans-Siberian Railway and the Amur River to Vladivostok and across Manchuria to Port Arthur and Dairen (Dalny). The Siberian route, previously described as limited in its usefulness, is an alternate access to the Pacific; and, even though a distinctly subsidiary route from European Russia and Siberia to that ocean, it should not be overlooked.

The Red navy has the task of defending the shores of Siberia, Korea, and Manchuria, a stretch of some three thousand miles. With the retrocession of southern Sakhalin, the lease of Port Arthur as a joint Chinese-Soviet naval base and special privileges in Dairen as a commercial port for thirty years, the situation

³ See *Krasnyi Flot*, Feb 1, 1947. See also Robert J. Kerner, "Russian Policy in the Far East," *Tale Review*, Autumn, 1945, pp. 119-138.

which existed before the Russo-Japanese War (1904-1905) has virtually been restored. The cession of the Kurile Islands has made possible direct Soviet access to open water—the Pacific—from Siberian shores and has facilitated sea connections between Vladivostok and Petropavlovsk, two of the three important Soviet naval bases in the Far East. The latter, it should be noted, is virtually isolated from the rest of Siberia at present by poor land communications (absence of railways and all-weather roads). Korea now under joint occupation, however, is the strategic pivot in the entire scene. It is the jumping-off place for an attack on Japan, at the same time that it may serve as a roadway for the conquest of Asia. It separates Soviet naval forces based on ice-free Petropavlovsk and ice-locked Vladivostok from those which will be based on Port Arthur, which is a warm-water port. Japanese Tsushima, which the Soviet delegate to the Rome Naval Conference in 1924 asked to have demilitarized, dominates the Straits of Korea. The Soviet Far Eastern region is still unable to cope with the building of large warships and to look after their maintenance and repair. That is at least one reason why the bulk of the Red navy in these waters has consisted of submarines, of which at present there are about 100.

With the disappearance of the Japanese navy, accompanied by anticipated restrictions against its rearmament and with the evacuation of occupation forces from Japan and Korea and the demilitarization of Tsushima, the Soviet Union may be expected to dominate the Okhotsk, Japan, and Yellow seas with a fleet of submarines, aircraft carriers, and land-based planes. All this, however, may be decisively affected by the character of Soviet-American relations and further developments of air and atomic power.

Such as they are, these are the four sectors in which Soviet sea power must operate, and which it must defend. The general disadvantages and the world-wide dispersion of operating bases here indicated has led to a checkered history in the development of the Red navy. From the days of Peter the Great, the father of the Russian navy, to the present time, the problem of sea power

has been a difficult one for Russian statesmen and naval strategists. What kind and how large a navy should Russia have? What kind should Russian naval strategy be? Defensive or offensive? Limited to seas or planned for both seas and oceans? Or should Russia have a navy at all? These questions have been asked for more than two centuries in and out of Russia.

After the disastrous battle of Tsushima (1905), which resulted from an attempt to transfer a Russian fleet to the Far East, the naval strategist, V. Novitsky, wrote in 1911:

Is it not strange that, in a state which claims world-wide importance in the areas of three oceans, they think over the question of the fleet for five years and cannot come to any conclusion? One of two things must happen! Either Russia must refuse her world position, and then she does not need a navy, or she will remain a great world power, and in that case she needs, she requires a strong offensive fleet. . . . A well organized naval force is for us an absolute requirement, a necessary condition for the maintenance of our place in the world configuration of the Powers of the new and old world. . . . There is no basis for the assertion that we can manage with some auxiliary coastal flotillas. To demand an active fleet does not at all mean to dream of aggressive arms and of invading foreign possessions; an active, offensive naval force is as much a weapon of defense as the passive coastal detachments; but it attempts to achieve its goal with different, more courageous and forceful means. An active navy defends the fatherland by advancing toward, attacking, meeting the enemy, having as its goal the destruction of the opponent, and, therefore, in case of victory it provides a complete, forceful defense; a coastal fleet only repulses the blows of the attackers, and even in case of the most favorable outcome of the battle it only repulses and throws back the opponent without having the means either to pursue or to destroy him.⁴

To follow Novitsky down into the time of Bolshevik rule: Would not such a fleet be able to bring help and succor to a future Soviet-sponsored revolution in some country, strategically located like Spain, i.e. to prevent the sinking of Soviet merchant ships

⁴ See V. Novitsky (ed.), *Pomni Voinu!* (Moscow, 1911), pp. 17-20.

in the Mediterranean by unidentified submarines as actually happened in 1937? ⁵ And might not such revolutions then change the problem of the command of the seas?

In the First World War Russia had an effective tonnage of about 500,000 and stood last or eighth among the Great Powers, ranking after Italy and Austria-Hungary. Even at that Russia could not meet the Turkish fleet in the Black Sea, as strengthened by two German cruisers, with hope of successful issue until 1916. As a result of the war and the revolution, in which the Bolsheviks helped to destroy certain units, their Navy almost ceased to exist. After 1928 in connection with the Five-Year Plans, it had to be rebuilt almost from a dead start. Caught in the midst of a great naval armament race initiated by Japan's denunciation in 1934 of the Naval Treaty of Washington (1922), continued in 1935 by Germany's unilateral abrogation of naval limitations imposed at Versailles and by the signing of the Anglo-German Naval Agreement that put all other continental Powers (and especially the U S S R.) at a disadvantage, as well as by the German-Japanese Anti-Comintern Pact, which was viewed as the origin of an alliance against the Soviet Union, that country in January, 1938, initiated the building of a strong navy

At the first session of the Supreme Soviet of the U.S.S.R., Premier Vyacheslav Molotov declared that "the mighty Soviet Power must possess a sea and ocean navy adequate for its interests and worthy of our great cause." ⁶ Later in the year President Mikhail Kalinin called on shipyard workers of Leningrad to "outdo" the strongest capitalist naval Powers. On the eve of the German attack on the Soviet Union a guess may be ventured that the Red navy had about 500,000 tons of light war vessels of many categories—i.e., it may have about caught up in tonnage with the Russian navy of 1916.

The Second World War was another setback to the Red fleet, which for its size rendered a heroic service in shore defense. The

⁵ Mairn Mitchell, *The Red Fleet and the Royal Navy* (London, 1942), p. 25.

⁶ Moscow *Izvestiya*, Jan 16, 1938. David J. Dallin, *The Big Three* (New Haven, 1945), pp. 85-104.

fleet and its bases and docks, however, suffered considerable undisclosed damage. As a consequence, it became Soviet policy to make good these losses from a share of the surrendered Italian, German and Japanese fleets. During the war and in lieu of ships of the Italian navy, then surrendered, the British in 1944 transferred to the U.S.S.R. the 35,500-ton battleship *Royal Sovereign* (renamed the *Arkhangelsk*), seven old destroyers (1,060 tons) and four modern submarines (960 to 730 tons); and the United States, the 7,050-ton cruiser *Milwaukee* (renamed the *Murmansk*). From the German navy, the Soviet Union received in 1946 the 6,000-ton cruiser *Nürnberg* (renamed *Admiral Makharov*), nine submarines, and the Deschimag dry docks; and thus far from the Japanese navy, five submarines. It is asking for two Italian dreadnoughts, and may receive one. Perhaps these additions will make up for the war losses of the Red navy; and it may be that, ship for ship, they are better than those which they replaced. The naval bases and shipyards in European Russia require considerable reconstruction, and new ones have to be built there and in the Far East. This will be the task of the Fourth and following Five-Year Plans.

In connection with Red Navy Day, July 22, 1945, Generalissimo Stalin declared: "The Soviet peoples wish to see their Navy still stronger and mightier. Our people will create new fighting ships and new bases for the Navy." ⁷ Realization of the immense task before them in building such a navy has somewhat dimmed the original propaganda, which in some quarters was interpreted as the building of a "navy second to none" to compete for "the command of the seas." A more limited vision is to be seen in the remarks at the Red Navy Day celebration in July, 1946, by Vice Admiral P. S. Abankin, addressing a meeting attended by officers of the Red navy and army high commands: "The Soviet Union never pretended and does not pretend to dominate all seas and oceans, but Soviet Russia as a great naval Power has its national [or state] interests on the seas and will at all times defend them. The Soviet Union will continue to build a strong navy

⁷ Moscow *Izvestiya*, July 22, 1945.

and strengthen its naval force in the interests of security and independence.”⁸

And finally there is the question of the doctrine of sea power that will give the growing Soviet navy its basic strategy and tactics. Will it be in line with great bourgeois masters like Mahan and Castex, to mention only two, or will it be something new, something revolutionary? Some light from the Soviet side has been thrown upon this question. Just as Lenin, starting with Marx and Engels, studied Clausewitz and was able to give an impetus for “Soviet military strategy,” since developed in discussions and writings all the way from Frunze to Stalin, so Soviet naval strategists, starting with Marx, Lenin, Stalin, Frunze, and Voroshilov, and studying Castex, intend to create a “Soviet naval strategy.”

In the December, 1940, issue of the notable *Morskoi Sbornik*,⁹ the Soviet journal of sea power, the introduction by the editors to the translation of a portion of Admiral R. Castex's great classic, *Théories Stratégiques* (Paris, 1929-1935) clearly indicated this view. They wrote:

Soviet theoreticians will not base themselves on the bourgeois views of Admiral Castex in the realm of strategy. In creating the strategic doctrine of sea power for the Soviet Union, they will develop it from the ideas to be found in the works of Marx, Engels, Lenin, Stalin, in the works of the Red army leaders, M. V. Frunze and K. E. Voroshilov.¹⁰

Whether Soviet naval strategists will be able to conceive a doctrine of sea power different basically from that evolved by bourgeois theorists remains to be seen. It seems fairly certain, however, that to whatever form and content they develop their

⁸ Moscow *Izvestiya*, July 27, 1946

⁹ Year 23 (93), no. 12, p. 37. There is an excellent bibliography prepared by N. M. Gurvich entitled: “Literature on Problems of Conducting War on the Sea: Principal Books and Articles from 1697 to 1939,” pp. 70-86, in European and Russian languages. See also I. Zikov, “The Military Art of the Red Army,” *V.O.K.S. Bulletin*, Moscow, 1946, nos. 1-2, pp. 16-30.

¹⁰ *The History of the Communist Party of the Soviet Union* (English ed., 1939), pp. 160-170.

basic theories will be added the revolutionary concept that the Soviet navy should be strong enough and in a position to bring aid to a Soviet-sponsored revolution in strategically located areas in various parts of the world. For this they do not need "a navy second to none" nor "the command of the seas," but one calculated in size, character, and composition (perhaps especially submarines) to achieve such limited objectives.

These views must be associated with others, like those expressed by the leading Soviet historian, Professor E. Tarle, when he emphasizes that "a decision in world affairs, be it major or be it minor, is inconceivable today without Soviet Russia's participation."¹¹ It has led to the use in Soviet navy circles of such a phrase as "the policy of universal presence" as falling within the scope of the supervisory right of a Great Power, "to uncover germs of warfare and to destroy them," on the ground that conflicts cannot be localized, but become world-wide, thus affecting the security of the Soviet Union.¹²

Such an evolution of Soviet sea power would naturally make it difficult for American and British strategists to judge between the vital, national interests of the Soviet Union and its advocacy of the world revolution and would lead them to a determined stand against the attainment even of the former. But that is the price that the Soviet state may have to pay if, or as long as, its leaders cling to a policy of world revolution.

¹¹ "A Note on the History of Diplomacy," *New Times*, No. 4, Feb. 15, 1946, pp. 10-13.

¹² See Admiral, "Considérations sur la Politique Navale de l'U.R.S.S.," *Revue Maritime*, Oct., 1946, pp. 723-730, or digest of this article in *United States Naval Institute Proceedings*, Feb., 1947, pp. 242-244.



THE RAIL, WATER, AND AIR TRANSPORT SYSTEM OF THE SOVIET UNION

By E. C. ROPES

There is an interesting parallel between the United States and the empire of Russia, now called the Union of Soviet Socialist Republics or the Soviet Union, in that the transportation system of both countries developed with the same main objects in view—access to seacoasts and access to raw materials. In addition, because both countries have rivers of tremendous length and carrying capacity, the gradual growth of a supplementary river transport system formed a natural corollary to that of railroads intersecting the countries. And at a later stage, the expansion of air traffic, first for passengers and then for freight, was necessary to cover the vast distances, as population filled the great empty spaces on the map of the United States and the Russian state.

Because the transport system in each country has developed as an integrated network, for the reasons mentioned, it is easier to divide the different forms of transport, rail, river, and air, on a basis of the various stages of that development, than by segregating the various forms in a separate discussion. This is particularly true of the U.S.S.R., where the individual stages of transport expansion are sharply differentiated in time and kind but follow

ERNEST C ROPES, born in Brooklyn, New York. Educated in St Petersburg, Russia, and Brooklyn. B A, Columbia, 1899 Y M C A secretary in northern Russia and Estonia, 1919-1922. Since 1925, Russia specialist, Bureau of Foreign and Domestic Commerce, U.S Department of Commerce, Washington.

Author of numerous articles on the U S S R.; editor, *Russian Economic Notes*, 1929-1940.

a general pattern of growth as the country's economy and industrial distribution moved east from the Baltic Sea, as that in the United States moved west from the Atlantic. In both cases at the present time all forms of transport function from tidewater to tidewater, and except for railroads to the Arctic Ocean. The difference is mainly in the speed with which the two countries developed their areas, the United States leading by some two hundred years.

In a short study of the transport systems of the Soviet Union, the simplest approach is from the starting point of industrial expansion, from west to east, including excursions to south and north in the case of Asia. For this reason the sequence has been adopted of beginning with the Leningrad industrial district, which has its chief ports on the Baltic Sea, and ending with the new and still embryonic districts on the Pacific and Arctic oceans. The accompanying map of the districts considered will make it simple for the reader to follow the textual explanations, and to identify the different rail, river, and air lines that will be mentioned and described. Thus, at the same time he will obtain a picture not only of the actual facilities that exist in the U.S.S.R. for transporting goods and passengers from place to place, but also of the degree of industrialization already reached under the successive Five Year Plans instituted by the Soviet Government in 1928 and continuing to the present; the fourth, to be completed in 1950, is now under way.

Leningrad District. The building by Peter the Great of St. Petersburg on the delta of the river Neva marks the first planned attempt in Russia to erect an industrial city at a port that could be reached from the Baltic Sea and also by rail lines eastward and southward, later northward. Water connections came first, with Lake Ladoga, and then via the Mariinsky Canal with the interior, and finally with Astrakhan on the Caspian Sea. The first south railroad was built to Moscow, with later lines running east to the Urals and eventually to the Pacific. As industry was expanded in the Leningrad (St. Petersburg) area, and other cities sprang up, the railroads followed, and the Mariinsky canal system

connected with the Volga River. At present the Leningrad industrial district is the second largest around one center in the country, and its transportation facilities include a railroad northward to the Arctic at Murmansk, lines into Finland, a line east and north that has its terminus, for the time being, at Vorkuta, not far from the Arctic Ocean, with another to Arkhangelsk, and railroad connections with the recovered Baltic States and former East Prussia. Leningrad has become a growing center of heavy industry distributing its products from factories recovering from the destruction of the war to all of European U.S.S.R. It is also connected with the White Sea by the White Sea to Baltic Canal, built in 1933, which connects Lake Onega with Belomorsk, the renamed Soroka. This canal is 142 miles long, and carries a large tonnage of freight.

Moscow. After the transfer by the Soviet Government of its capital to Moscow from Leningrad, the former began its rapid growth, not only because it became the seat of government, but also because of a deliberate policy of making it a dominating industrial city, amply supplied with electric power, and embodying all forms of modern transport. Already connected with the south, Moscow strengthened its rail connections with the interior, and multiplied its lines to the Urals and later westward, to Poland, Germany, and Czechoslovakia. Its burgeoning industry drew huge quantities, carried by rail, of materials from eastern producing areas, coal from the Donets Basin, other metals and minerals from the Ukraine and the Caucasus. The textile industry of Moscow and neighboring cities (Ivanovo) manufactured the cotton crop of Central Asia, home-grown and imported wool, and silk, linen, and hemp. The need for more electric power brought about the development of the Moscow lignite coal field and the peat bogs so abundant in that area. In Moscow 15 per cent of the industrial output of the U.S.S.R. was produced in 1941. Quite recently (1937) Moscow became a seaport, connected by the Moscow-Volga Canal with the Volga River and the Caspian Sea; and a canal link to the Black Sea via the Don River was under construction before the war. Suburban traffic is electrified

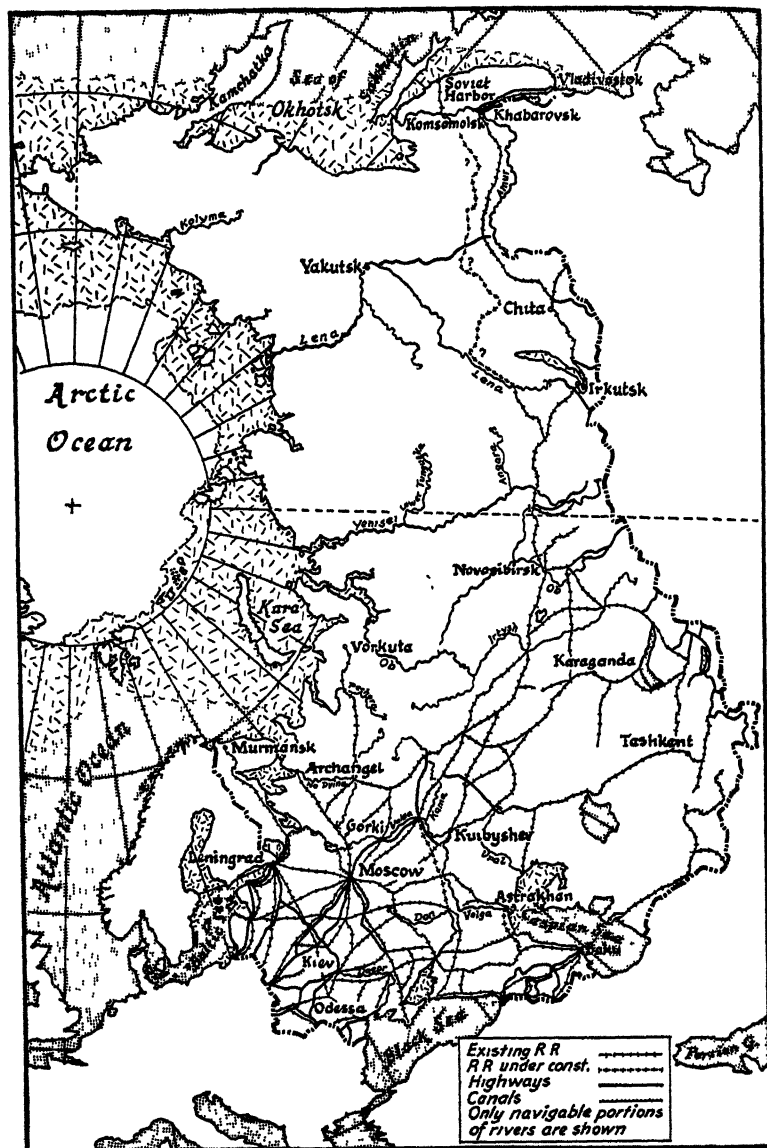


Fig. 11. The Soviet Union's internal communications net, somewhat simplified. Air lines are not shown but are of importance, especially in the north. Practically all the navigable rivers are frozen in winter.

for some twenty miles in certain directions, and is being expanded. Moscow is the unique possessor of an extensive subway system, started in 1935 and building ever since, even during the war, looking toward complete transverse and ring service by underground and under-river lines for the whole city, which has been limited in population and size according to a plan adopted before the war.

Moscow, as the capital, has the best and the most extensive air service in the U.S.S.R., being connected with the capitals of all the other fifteen constituent republics, and also with a number of foreign capitals in Eastern and Northern Europe. To date the refusal of the Soviet Government to allow foreign planes to fly over its territory has prevented extension of service, on a reciprocal basis, to the United States, Canada, England, or other countries desirous of extending their service to Moscow and other Soviet cities. The longest air line runs eastward to Khabarovsk and Vladivostok, and other long lines fly to the Caucasus, Central Asia, and the Arctic. Airfields, many built during the war, are dotted over the Soviet Union; but their location, except for the older ones, has not been divulged. It is only reasonable to assume that facilities are available, to the right type of passenger and freight, from Moscow to any part of the U.S.S.R.; but the service is necessarily irregular if only by reason of climatic conditions in the winter in the northern areas. Yet flights are made throughout the cold months to the Arctic, which owes its development largely to the air facilities now possible.

Donets Basin District. The Donets Basin, as it is called, is the largest and oldest industrial district in European U.S.S.R., dating back at least one hundred years; its early prominence was due to the discovery of the Krivoi Rog iron deposits, vast coal fields, and later the manganese deposit of Nikopol. Later investigations and development have provided nonferrous metals, chemical raw materials, and finally hydroelectric power at the Dnieper falls that has accounted for several industrial towns producing many new commodities. From the earliest days of railroad building in Russia, connections existed between the Donets Basin and St.

Petersburg and other northern cities; these have been greatly expanded during the past twenty-five years, and links between the cities in the district have multiplied. It has now the densest rail network and traffic in the country, and is joined with other areas west and east, also northeast with the Urals and southeast with the Caucasus.

Water transport in the Donets Basin is limited to the two rivers that form its western and eastern boundaries, the Dnieper and the Don. The former is dammed at Zaporozhye and is navigable as high as Dorogobuzh, while the latter is navigable for several hundred miles from the mouth at the Sea of Azov. The Black Sea littoral has a number of important ports, serving the year round for ocean-going ships. Besides the air lines connecting the district with Moscow and the north and east, there is local service between the cities in the Basin, and possibly connections with Eastern European countries.

Volga Area. The entire course of the Volga has long been one of the main transport arteries of Russia; and its usefulness has recently been increased by the construction of the Moscow-Volga Canal, and the damming of the rivers at Rybinsk, part of a huge project of gradual development of water power, navigation, and irrigation extending eventually to Astrakhan. Many cities now connected by rail and air have grown up along the Volga, notably Gorki and Stalingrad. Navigable tributaries add to the Volga network, the river itself forming part of the Mariinsky Canal system previously referred to. Soviet government plans to include the passage of ocean-going ships the length of the Volga, boats passing from the Don by canal to the Caspian and the Volga.

Urals District. Space does not permit the division of the Urals industrial district into north and south sections, though each deserves mention. A very old example of somewhat primitive industrial development, the Urals took on extraordinary importance during the late war, when the district and the adjoining western Siberia areas had to replace the Donets Basin, which was occupied by the Germans. Feverish industrial relocation, construction, and expansion, utilizing metal and mineral deposits

once considered inferior to those of the southern Ukraine, produced enormous quantities of war material of all kinds, while the working of recently discovered and old stores of chemical materials supplemented the production of ferrous and nonferrous metals.

Transport in the Urals was originally limited to east-west lines connecting the European and Asiatic parts of Russia, after the building of the Trans-Siberian line in the 1890's. Prewar and wartime construction, however, added numerous north and south lines in the district, and also lines running east to coal and oil centers; branch lines brought in mineral deposits hitherto inaccessible, and at least one river was dammed for power. Air lines seem to be limited to through lines east and west, though there is some movement to the north and to Central Asia. No water transport is available in this district, though there have long been projects for connecting the rivers of northeastern European Russia with the westernmost Siberian river, and thence across the Asiatic continent.

The Caucasus Industrial District. Long famed for its tremendous oil resources, the Caucasus before the Revolution was connected with northwestern European Russia, first by the Volga and then by rail; the export port was Batum on the Black Sea, with a railroad and later two pipe lines crossing the mountains from Baku. Besides a rail line along the western littoral of the Caspian Sea, there is a recently finished line along the Black Sea shore, connecting South Caucasus with North, and running from Tbilisi southward to the Iranian border. There are no rivers in the Caucasus for navigation; but several are developed for power. Air connections over the mountain ranges are available to the north and west, and service is year-round.

West and Central Siberian Industrial Districts. While Siberia has disappeared as a name from Russian maps, being replaced by the names of oblasts (provinces) with some old or new city as a center, it will be applied here to the areas immediately east of the Ural Mountains, from Kazakhstan to the Arctic Ocean. Here, before and particularly during the last war, very rapid industrial development took place, beginning with the opening-up

of the Kuznetsk and later the Karaganda coal fields, and continuing with the rapid construction of new and the expansion of old industrial cities, the growth of population, and enormous increases in production, first of war material and later of heavy goods. With ample reserves of fuel and metals and minerals for years to come, this district forms a center of production and distribution for the Asiatic part of the U.S.S.R. and also ships westward part of its growing output.

For east-west transport, Siberia is dependent on railroads: first the Trans-Siberian, with its many south and north branches, and latterly the South-Siberian, a line begun before the war and not yet completed, which is to connect with the Baikal-Amur line, still under construction. These roads intersect or parallel a series of huge rivers, flowing from south to north to debouch finally in the Arctic Ocean. For generations these rivers have served as traffic arteries, and their importance is continually growing; navigable for thousands of miles, they carry large quantities of goods in both directions. Even in winter they are highways, and their tributaries extend throughout the area and add to the freight carried.

In this district of enormous distances, air lines have proved particularly useful, first for passenger and later for freight carrying. Lines parallel the main railroads, and connect the centers among themselves and with the west. Here again flights to the Arctic, while not regular, are made at all seasons. Water traffic is also gradually developing from the interior to the Arctic, and the ports along the Kara Sea route are growing fast, as resources are exploited and industry expands in the northern districts.

The Central Asiatic District. Long thought of as the cotton belt of Russia, sending its product to the mills in western European Russia, the five Central Asiatic Republics, while expanding their cotton growing, are also planting other crops, and are well on the way to developing industry. The northernmost Republic, Kazakhstan, is in the throes of exploring its many mineral and metal deposits, and of building rail facilities to handle the resulting new traffic. The South-Siberian will be of particular im-

portance here, as was the Turkestan-Siberian in the eastern part of Central Asia when it was completed in 1930. There is one railroad from the Tashkent district, where new textile mills and other industries have been recently established, to the Urals, and a branch of this to the Caspian Sea tapping the chemical production of Karabugaz; a recent branch runs to the Karatau phosphate mines, newly opened, and others will be constructed as time goes on. Oil fields in the southeastern Republic are a recent development, which proved to be useful during the war.

Water transport is limited to the shallow Amu-Darya and Syr-Darya rivers, both more useful for irrigation than for navigation. Air transport is in its infancy, though imperative in this land of huge deserts and mountain ranges. Regular service to Moscow will be supplemented with intermediate and local lines. A feature of the railroads here is the "condenser" locomotive, which runs 1,000 miles without replenishing its water supply.

Irkutsk District. The area around and north of this old city on the Trans-Siberian Railroad, one of the fastest-growing in the Union, was originally a center for gold miners and fur trappers, and industry was sparse. But as Yakutia developed in the north with exploration disclosing industrial material reserves, and animal husbandry and agriculture expanded, the city took on new importance; and it has doubled its population in recent years, and multiplied its industries. However, it still has only the one railroad with branches north and south planned, and only one river flowing out of Lake Baikal, the Angara, unavailable for navigation though it empties into the Lena, which is. The Angara will soon become, however, a source of electric power greater than any other in the U.S.S.R.; and around it will rise new industrial cities.

The Trans-Siberian, now double-tracked to Vladivostok, is still the only main rail line in the district; but construction was begun before the war on a second trunk line to the east, the Baikal-Amur, representing the continuation of the South-Siberian line, starting from Taishet or Nizhneudinsk, and running north around Lake Baikal, thence generally east to Komsomolsk and Soviet-

skaya Gavan on the Straits of Tartary. This line, built through the taiga, will provide an outlet for the products of Yakutia, and will open up vast territories hitherto inaccessible by rail or road, including huge forest areas and so far unexplored mineral riches.

Air service in the district is mainly east and west, though regular lines fly to Yakutsk and the Lena and Aldan gold fields. Lake Baikal shipping is active; and the lake, frozen in winter, serves as a highway and railroad bed for several months annually.

Far East. This enormous district, from Baikal to the Pacific and from Manchuria north to the Arctic Ocean, is the least developed in transportation facilities and the most sparsely populated in the Union. The only main railroad, the Trans-Siberian, runs from Chita east to Khabarovsk, thence south to Vladivostok, with a few branch lines, south to Kyakhta and possibly Ulan Bator in Mongolia, and to the Amur River; and a line, completed in 1935, from Khabarovsk north to Komsomolsk. The Amur is the only waterway of consequence in the south, while the Lena, Kolyma, and other rivers empty into the Arctic Ocean and the Sea of Okhotsk. Air transport is therefore of vital importance, connecting south with north, and the mainland with Kamchatka. During the war the air life line ran from the United States to the Western front over the trackless wastes of this area.

Vladivostok District. Vladivostok, the terminus of the Trans-Siberian trunk line, is the only warm-water port in the Soviet East, and in addition is the center of a small but important industrial district, with two coal fields near by, at Suchan and Artemovsk, and many small factories along the railroad to Khabarovsk, an important industrial and oil town. Accessible by water and rail, Vladivostok is also a main air center for the Far East.

Sakhalin District. While cut off by water from the mainland, Sakhalin Island, now completely owned by the U.S.S.R., is an important coal and oil producer, and will soon provide wood products and other goods. A pipe line to the mainland carries oil, but otherwise transport is by ship. There is probably an airfield on the island for local traffic.

The Arctic District. As previously suggested, the shores of the

Arctic Ocean are rapidly developing, and industry, port construction, and the uncovering of the natural resources of the Arctic littoral are encouraging a rapid increase of ocean transport both east and west, from Murmansk to Vladivostok. Utilization of the northward-flowing rivers for navigation inland is a special feature of this area, and railroad connections southward are still in the future. A foretaste is given, however, in the construction of a railroad from Kotlas to Vorkuta—to be extended in the near future (if it has not already been completed) to two or three existing ports on the Arctic. A branch eastward to the Ob River is planned. Problems of roadbed construction in regions of permafrost are being overcome, and the presence of huge deposits of coal and other minerals, besides vast forest reserves, assures sufficient loads for railroads in many sections.

Highways in the U.S.S.R. Little space need be given to highways in the Soviet Union because of the relative unimportance and slow development of this form of transport and of automobile traffic. However, several important roads were built during the years before the war. Two from Moscow westward, to Minsk and to Kiev, are reported to be modern hard-surfaced highways, with dividing strips; the first 450 miles long, the second 514 miles. Another, paralleling the railroad from Vladivostok to Khabarovsk, is also hard-surfaced and all-weather type. In the Far East, a second modern highway runs from Magadan to Nizhne Kolymsk. It is "hundreds of miles" long, through mountains, and is the only road reported to be equipped with gasoline stations and repair shops. It taps the rich mining areas being developed as far north as the Arctic Ocean. Another important road, 620 miles long, connects Yakutsk with the Trans-Siberian Railroad, forming the only outlet for communication between this huge autonomous Republic and rail transportation. The last new motor road runs from Osh over the Pamir Mountains to Khorog, a distance of 469 miles.

Plans for Future Development of Transport. Because of the break enforced by the war, little progress was made in transport extension during 1941 to 1945, except for a few short rail lines

associated with the war effort. But the Soviet planners are already making up for the time lost, and have announced many plans for fulfillment before 1950. Among these the most important are the completion of the South-Siberian line, for its projected length from Kuibyshev to Taishet on the Trans-Siberian; a line connecting the Karaganda coal mines with the Central Asiatic Republics; and the completion of the Baikal-Amur trunk line to Komsomolsk. A number of short lines of industrial importance are also planned, as well as the electrification of some 3,000 miles of existing lines, particularly in the mountainous regions of the Urals and the Caucasus. Double tracking and replacement of light rails with heavy are planned for sections of dense traffic, and reconstruction of roadbeds and bridges to carry modern rolling stock. Improvements and modernization of passenger and freight equipment are scheduled, carrying out programs already under way when the war started. Rehabilitating the railroads destroyed by the German invasion has already begun but will take several years to complete, many improvements being introduced as rebuilding progresses.

Extension of waterways was gradually carried out even during the war, and river traffic has expanded both in number of boats and in freight carried. These will continue. Expansion of airline service has also been maintained, converted military planes being used until new civilian types can be produced. Feeder lines from distant points to railroads are a feature of the plan.

The Soviet Union will embark on a program of road building as soon as it can, utilizing mechanized facilities and local raw materials. Many highways are planned, but no details have been published. As automobile production increases, however, road building may be expected to keep pace. The construction of roads in regions of permafrost, similar to those from Magadan northward and from Yakutsk southward, will be important in opening up vast areas without modern transport facilities other than the rivers in summertime—areas of increasing industrial importance.

YAKUTIA AND THE FUTURE OF THE NORTH

By OWEN LATTIMORE

Since the war, the circumpolar has become in a new sense an American frontier. The war itself hastened the development of the Far North, the important sectors of which, grouped around the Arctic Circle and converging toward the North Pole, are held by the United States (in Alaska), Canada, Greenland, Norway, and the Soviet Union. The ferrying of Lend-Lease planes spectacularly proved the potentialities of long-range Arctic and sub-Arctic air routes; but planes flying over the Arctic do not of themselves develop the Arctic. For development in the true sense—including development of freight and passenger traffic for air lines—there is required an all-round exploitation of the resources of the Far Northern regions, and an increase of the population engaged in productive activities as well as servicing activities.

Looked at from this point of view, the Yakut Autonomous Soviet Socialist Republic is in many ways the counterpart of Alaska. It does not correspond to Alaska exactly in geographical position, it is true; the territory immediately across the Bering

OWEN LATTIMORE, born Washington, D.C. Graduate School, Harvard, 1929. Director, Walter Hines Page School of International Relations, Johns Hopkins University.

In China, engaged in business and newspaper work, 1920-1942, and in research and field work after 1929; political adviser to Generalissimo Chiang Kai-shek, 1940-1942.

Author: *The Desert Road to Turkestan*, 1929, *High Tartary*, 1930; *Manchuria, Cradle of Conflict*, 1932; *The Mongols of Manchuria*, 1934; *Inner Asian Frontiers of China*, 1940; and numerous articles on Asiatic affairs.

Strait from Alaska, and fronting the Pacific, belongs administratively to the Khabarovsk Krai (Territory) of the Russian Soviet Federated Socialist Republic (RSFSR), stretching up from the Ussuri and Amur rivers past the Sea of Okhotsk and the Kamchatka Peninsula to the Chukchi Peninsula. Yakutia lies west



Fig. 12. Yakutia's position in the world (orthographic projection, centered near Yakutsk).

of this territory and fronts only on the Arctic Ocean, not the Pacific. In one major sense, however, Yakutia corresponds functionally to Alaska: it is the home of an established Arctic and sub-Arctic population which is already master of all the techniques needed for the utilization of the Far North, and can be expanded to meet growing needs.

Yakutia, established as an autonomous republic in 1922, is the biggest of all the autonomous republics of the Soviet Union, covering approximately 1,200,000 square miles, and about half of it within the Arctic Circle. The area of Alaska is 586,400 square miles. Yakutia extends from latitude 56° N. to 76° N.; Alaska, from 51° to 71° 25' N.

In population, the comparisons are especially significant (see Fig. 2). At the Census of 1910, Alaska had a population of 64,356. The white population increased to over 40,000 and then decreased during the First World War. By 1920 the total population was only 55,036, but by 1939 it had increased to 72,524 inhabitants. Of these 39,170 were white, 32,458 Indian and Eskimo, the balance a scattering of other races. In Yakutia there is a total population of 401,000 (figures of 1939) of whom about 240,000 are Yakuts. Minor Arctic and sub-Arctic peoples include Evenki (Tungus), Eveni (Lamuts or coastal Tungus), Dolgans, Oduls (Yukaghirs), and Luoravetlans (Chukchis). The remainder are Russians and others from "outside." It is worth notice, in passing, that the Chinese have penetrated to both Yakutia and Alaska. There are some 2,700 of them in Yakutia. The 1939 figures show an urban population of 79,000, mainly in the city of Yakutsk. The density of population outside the few towns is only 0.1 per square kilometer.

It would be hard to overestimate the importance of the fact that the Yakuts are a relatively numerous people—overwhelmingly the largest nation of the Far North. In all Greenland, Canada, and Alaska there are not more than 40,000 Eskimos. Compared with them the 240,000 Yakuts have much more substance as a body of people, a society, capable of approaching the problems of their region as a society and not merely as a small aggregate of individuals. Although 240,000 is not a large number, yet it is a large enough number to make it possible to work out the social applications of methods of using the resources of the Far North.¹

¹ The material in this article was drawn partly from a brief visit to Yakutia in 1945, when I had the privilege of accompanying Vice President

Long before the coming of the white man, the Yakuts made their own remarkable invasion and partial conquest of the Far North. In our own time they are proving their ability to take over, make their own, and graft on to their traditional techniques of northern living all the technological resources of modern civilization. The measure of their success will be a standard, for other peoples, of the difference between primitive men and modern man in mastery of the Far North.

The land of the Yakuts is a vast tilted plane sloping from the east and south to the west and north. Its greatest heights are in the Khrebet Chereskogo (10,217 feet) and a peak just south of the Aldan River (8,858 feet). The most important ranges, however, are the Verkhoyansk Khrebet, forming the Lena-Yana watershed, and the Stanovoi Khrebet, which forms most of Yakutia's southern border. These reach heights of 8,200 and 8,143 feet respectively. Its great rivers, from east to west, are the Kolyma, the Indigirka, the Yana, the Lena, and the Olenek. Of these the greatest is the Lena. It is the greatest corridor of transportation in the whole country, and the greatest density of population is in the south-central area where the Aldan flows into the Lena from the east. The next greatest density is a little farther north, where the Vilyui flows into the Lena from the west. In these two areas live 90 per cent of the Yakut nation.

The climate of this country is harsh. Verkhoyansk used to be considered the "pole of cold," with a record of -96° F. and a January mean of -58° ; but there are now indications of an even colder climate along the upper course of the Indigirka, which is farther south but in a larger massif of high country. In Yakutia as a whole the winter lasts for seven months, and both autumn and spring are extremely short. In the summer, only

Wallace on his mission to Siberia and China. In particular I had, in the city of Yakutsk, the extraordinary good fortune to be shown through the Yakutsk Museum by Professor A. P. Okladnikov. The collections in the museum vividly illustrate the archaeology and history of Yakutia, and Professor Okladnikov and his wife, who have explored the entire Lena basin from Lake Baikal to the Arctic, have won a deservedly high place among the young Soviet experts on peoples and their cultures.

Urals there was a secondary shield, with a thickness of 2,600 feet, but in the Baikal region and north of it the earth was bare. Measurements of the Greenland icecap have shown that the temperature of the lower ice is nearer to melting point than that of the upper ice. From this there is derived a theory as to the effects of the ice shield in the last ice age: where ice covered the land, it acted as an insulator, so that the frost did not penetrate deeply into the earth. Where there was no ice cover, the winter cold penetrated so deeply into the ground that it could not be thawed by the summer sun. Nevertheless, the sun did thaw the surface, so that vegetation grew; and animals could live on the vegetation both in summer and in winter.

This appears to be the explanation of two paradoxical phenomena especially noticeable in Yakutia: during the ice age, mammoths and rhinoceros were numerous in this region, as is proved by their frozen bodies; and yet at the present time the subsoil is permanently frozen. Some of the figures relating to both phenomena are interesting. The find of mammoth ivory in Yakutia (largely from the north and islands off the Arctic coast) is still 25 tons a year. The subsoil frost, on the other hand, goes down to 1,640 feet at Nordvik. A hundred years ago, in the city of Yakutia, a merchant had a well dug to a depth of 380 feet without getting to water beneath the permanent frost. It has now been established that the depth of the *merzlota* at Yakutsk itself is more than 446 feet.

These conditions govern the fact that at the present time the surface of the earth in Yakutia thaws in summer only to a depth of a few feet. Drainage is therefore only surface drainage. Even the great rivers cannot carry off all of the summer thaw, and the surface of the land is covered with a maze of small streams and innumerable lakes. The permanent frost, however, has a great economic value. The climate over the territory as a whole is dry—which may explain why there was never a thick shield of ice. The subsoil frost, thawed lightly from the top each year, is therefore the reservoir of moisture which supports the vast forests of larch and (especially in the southwest) of pine.

The first known appearance of man in this region dates from the second half of the paleolithic period and is therefore later than in Europe and more southerly regions in Asia. Not less than four or five thousand years ago the neolithic culture began to displace the paleolithic. The human population increased, and spread along the river network of Yakutia. The Eskimo culture may be regarded as a survival of the New Stone Age of northern Siberia, as developed along the Arctic coast.

This culture went through various stages of development. The people hunted large and small game—moose, elk, reindeer, bear, and birds—and also fished with harpoons, nets, and hook and line. They also made pottery—molded, not needing the potter's wheel. The amazing continuity of certain cultural elements is shown by the fact that there are sites where stone-age hunters made their magic drawings and where, in the topmost strata of offerings, are found even Soviet coins, presented to the gods of the wilderness and the wild game by the last of the hunters living the old primitive life.

There was trade, even between distant regions, as long ago as the stone age, and it is therefore a question whether the knowledge of metal working penetrated among the stone users of ancient Yakutia by trade, or was brought by a migrating people—perhaps the Yakuts' ancestors, whose penetration into this land began somewhere on the vague edge of recorded history. It has often been assumed that they lived in the region of Lake Baikal and were displaced northward as part of the last dispersal of peoples resulting from the campaigns and conquests of Genghis Khan. Traditions attributed to this period are found all over Asia, simply because unwritten history tends to attach itself to conspicuous names.

Okladnikov, one of the best contemporary Soviet authorities, shows that it is probable that tribal movements from the Baikal region into the Lena basin went on from the fifth to the tenth century of the Christian Era, and that the people concerned belonged to the Turkic group of tribes known from Chinese chronicles and inscriptions in runic Turkish to have lived in the Baikal

region in those times His conclusions are borne out by the character of the Yakut language and by three inscriptions in runic Turkish from the Upper Lena region. Later migrations undoubtedly resulted in the absorption of a Buryat-Mongol element into the Yakut people; the Buryat-Mongols, themselves a mixed people, also include a strain derived from the ancient Turkish tribes of the Baikal region.

It is indisputable that those of the ancestors of the Yakut people who migrated from the south were once owners of sheep and camels, as well as cattle and horses, and that they had practiced agriculture or been in close contact with it. Their vocabulary shows this, and we know that the ancient Turks between Lake Baikal and the Orkhon River practiced not merely agriculture but irrigation, in addition to their pastoral economy.

What was important about the migrations which led to the formation of the Yakut people was that the southern element, though forced by the climate to abandon their agriculture, sheep, and camels as they moved north, were able to get horses and cattle right up to the Arctic Circle and even beyond it. This was enough to change the character and history of life in the Far North.

Success in bringing cattle and horses to the Far North increased both the quantity and the dependability of the food supply and therefore made it possible for more people to live closer together. The Tungus-Evenki and other peoples, into whose ancient domains came the new invaders, could keep alive only by living in much smaller groups, and moving more frequently and over much longer distances, than the owners of cattle and horses. It was therefore the Yakut culture, rather than a Yakut people, which invaded the North, and accordingly Tungus-Evenki and other groups began to go over to the Yakut culture and be absorbed into a compound Yakut people.

It should, of course, be understood that the cattle and horse culture of the Yakuts was "high" only in comparison with cultures which depended on hunting, fishing, and reindeer. Hunger, undernourishment, and actual famine have always haunted the

peoples of the Far North. The Yakuts had milk and meat, from animals which did not have to be hunted; and their cattle did not have to be herded over such great distances, under conditions of such extreme exposure, as domesticated reindeer. A large part of the diet of a large part of their people consisted of the edible but not highly nourishing inner bark of trees, and most of them lived near the hunger line. They solved the problem of life in the Far North only as far as it could be solved within the resources of a prescientific people.

After the Yakuts had been the dominant people of the Asiatic Far North for a number of centuries there came a new wave of invasion, that of the Cossacks. Their spread into the remotest reaches of Siberia was a part not only of Russian history but of modern world history, which burst into activity all over the world at the same time. Yermak, the first great despoiler of Siberia, set out in the 1580's. By 1620 the Cossack detachments were masters of the Yenisei basin. In 1632 Beketov, coming from the Yenisei, established the first fort and settlement of Yakutsk.

Yakut society, as the Russians found it in the seventeenth century, was dominated by chieftains who led small warrior-bands against one another. The herding economy was not mobile enough (because cattle had to be kept under shelter during the long winter) to permit the assembling of large tribes, such as those which appeared from time to time on the steppes of Asia. The Yakuts had attained that prefeudal level of the predatory society at which the strong fight one another and rob the poor in irregular raids, as opportunity arises.

The system imposed by the Russians came nearer to feudalism than the Yakut system. There are resemblances between the penetration of the Siberian wilderness by the Russians and the penetration of Canada and the American West by the agents of the Hudson's Bay Company and the American Fur Company; but the differences are greater. The Russian society in the seventeenth and eighteenth centuries had only in part adopted the money economy. The standard method of obtaining furs was by simple feudal tribute. Each grown man had to bring in a tribute

ancy that an "offender against the government," or exile, came to be regarded as representing a higher order of humanity. There is a story of an exile who, having in some way offended a Yakut, was rebuked by him with the words: "And you call yourself an offender against the government!"

In time, some of the exiles were allowed to engage in scientific work; they founded the Yakutsk Museum and organized a great combined scientific exploration of the North, some of the results of which were published in English together with the results of the Jesup North Pacific Expedition, in the early 1900's. By the 1890's Marxists began to appear among the exiles. Some of the most famous Bolshevik leaders served periods of exile in Yakutia, including Stalin himself, Ordzhonikidze, and Yaroslavsky. Of these the most influential, because of his position as head of the Yakutsk Museum, was Yaroslavsky. In a legal publication edited by exiles, scientific discussions of the development of Yakut society and the characteristics of Yakut landownership were carried on; but at the same time Yaroslavsky organized secret, illegal revolutionary teaching among Yakut students. From among the eager young students there came, eventually, a revolutionary Yakut leadership of the Yakut people.

By the time of the Bolshevik Revolution there existed a strange situation up under the curve of the Polar Circle. Here, in a land of widespread hunger, political tyranny, peculiarly brutal frontier exploitation, and low cultural development, working under conditions which exposed them to unheralded and arbitrary suppression, but nevertheless working, were some of the best minds of the twentieth century. Themselves rejected, scorned, and persecuted by the master race, they yet somehow managed to communicate to Yakuts and other subject "natives" hopes and dreams of a revolution that would be capable of bringing freedom, education, and the cultural refinements of the twentieth century even into the Arctic wastes.

The society of which they were prisoners was so loose, lethargic, and weakened by corruption and endless animosities that it would be reasonable to suppose the determined and organized revolu-

tionaries of the North were able to seize power more swiftly and decisively than the revolutionaries in confused and war-exhausted European Russia. It must not be forgotten, however, that every variety of political thought in Russia was reflected in Yakutia—liberal, democratic, and revolutionary thought among the exiles, and reactionary and militaristic thought among the Tsarist officials. At the same time the Yakut people were divided: some had privileges to defend as hangers-on and subordinates of the Tsarist officials; others thought they saw the opportunity to create a kind of tribal independence in which they themselves, as chiefs, would set up their own structure of power but would not have to concede rights or power to their tribal subjects.

The revolutionary civil war was, therefore, as bitter and remorseless in Yakutia as in any part of Russia. In addition, communications were poor, and civil war to the south cut off the usual supplies of food and goods shipped down the Lena. The interests of the Japanese General Staff, then bent on seizing all eastern Siberia, ranged far, and Yakutia suffered from a band of counterrevolutionaries organized and financed in distant Harbin, with Japanese aid. The future of Yakutia was decided by the fact that the Yakut people took the side of the Revolution.

The history since 1924 is interesting for its difficulties as well as for its achievements. The old Yakut culture, as has already been pointed out, had such vitality under the conditions of the Far North that not only other peoples of the North but to a marked extent even Russians had been to some degree "Yakutized" by contact with it. In many cases both the Yakuts and their cattle barely survived, and were almost perpetually hungry; but they did survive. The narrow margin of survival developed in the Yakuts, it may be inferred, two marked characteristics: a great tenacity and, among the "squirearchy," great skill in maintaining ascendancy over their own people, no matter what they had to yield to the Russians.

Since the Yakut toions, or squires, needed an impoverished class of rural labor in order to maintain their own relative ascendancy, the problems of change could not be solved except

by collectivization; and among the Yakuts, as among other Asiatic peoples, resistance to change could be organized partly by an appeal to the old Yakut tenacity in resisting "Russianization." The struggle appears to have been long and bitter. Collectivization won out only by the slowly established proof that formerly poor, backward, and socially helpless people could in fact organize and manage their own affairs through their own elected committees, without being beholden to toons.

As might be expected, the change proceeded more slowly in the traditional livestock economy of the Yakuts, where the forces of resistance to change were most deeply rooted. As in other regions, there were heavy setbacks through the slaughtering of livestock by those who either feared collectivization or had an interest in proving that "it wouldn't work." The turning point appears to have come with a land reform in 1929. By 1935 the Yakuts, with nearly 170,000 head of horses and over 455,000 head of cattle, had made good the losses of livestock and had 92 per cent more horses and 90 per cent more cattle than in 1911.

Greater gains, however, were made in agriculture, which for the majority of the Yakuts was a new economic activity, because it is always easier to accept a new form of social organization along with a new and profitable economic activity than it is to impose a new structure on an old activity. Agriculture now includes rye and wheat, in addition to the barley cultivated by early Russian settlers; and the introduction of tractor stations to work in cooperation with collectives has made possible a rapid expansion of the sown area.

Finally, the continued prosperity of mining has begun to develop industrial workers among the Yakuts; in 1935, 1,000 of them were miners in the Aldan region alone—a large figure for a population of only 240,000. The Aldan gold fields are the second most productive in the Soviet Union. In addition, coal is worked in two areas along the Lena, and other mineral resources include wolfram (tungsten), molybdenite, silver, Iceland spar, fluorite, gypsum, and lead.

A Soviet writer speaks of transport as the "sick place" in the structure of the Yakut Republic; but, as in our own Alaska, the sickness is not incurable. The war speeded up the development of air routes in Yakutia as in Alaska, and Yakutia also has the advantage of the steadily developing Northern Sea Route. Railroads will presumably have to await the completion of the Baikal-Amur Magistral, the "northern Trans-Siberian," completion of which appears to have been delayed by the war. Only when it has been completed can feeder lines be built up into Yakutia.

Among the Yakuts of today 57 per cent are literate (1935 figures), as compared with only 2 per cent before the Revolution—a remarkable achievement, in view of the isolation of many outlying groups and the difficulty of bringing either the schools to the people or the people to the schools. Thirteen newspapers are printed in the Republic, eight of them in Yakut. Between 1932 and 1935 the books published included 480 titles—349 in Yakut. There is a research institute for language and culture, a training school for teachers, and a national system of primary and middle schools.

With these advantages, Yakutia undoubtedly stands well up in front in the development of the sub-Arctic and Arctic as a whole: before modern history began, the Yakuts were in the forefront of the Northern peoples, and at the present time they are rapidly learning to develop the North by a combination of traditional skills and modern techniques.

That this is the right approach is beyond question. The Far North can never be truly a part of modern civilization if it is only invaded or, as it were, raided by transient representatives of modern technology. To integrate the Far North with the rest of the civilized world, technology must acclimatize itself there; this it can never do satisfactorily unless the peoples of the Far North are enabled to make themselves at home in the realms of science and technology. Much that has been accomplished in the Soviet Far North, and especially in Yakutia, should be studied and applied in the Far North of North America.

A NOTE ON THE LITERATURE

This article is drawn chiefly from the following sources:

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10

THE WESTERN FRONTIERS OF RUSSIA

By ROBERT STRAUZ-HUPÉ

Russian foreign policy is characterized by matchless simplicity of conception and persistence of effort. By comparison the foreign policies of the Great Powers of modern times appear vacillating and ambiguous. There is in the history of Russian foreign policy no counterpart for that Hamlet-like indecision which gripped German expansionism confronted by the fateful choice between a western and an eastern "orientation," of the pull and counterpull of British Empire commitments and continental interests, and of the contradictions between French colonial aspirations and French European policies.

Russian foreign policy is dominated by the strategic factor; its objectives, under the direction of the Czars and Soviet leaders, have remained the same: attainment of strategic frontiers and, wherever racial affinities reenforce strategic geography, ethnographic frontiers. The principal theater of operations is now, as it has been for nearly three centuries, eastern and southeastern Europe, and Russian policy in the Middle and Far East has been largely derivative: Only when Russia was blocked in Europe, on the Baltic and Moldavian Plains, only then did she turn to Asia. Russia exercised pressure on the Asiatic rim lands, espe-

ROBERT STRAUZ-HUPÉ, Associate Professor of Political Science at the University of Pennsylvania. Both A.M. and Ph.D. were granted by the University of Pennsylvania. He came to this country in 1923 from Austria, where he attended the University of Vienna. He was for approximately ten years associated with American banking concerns. In 1937 he turned to teaching and writing, and he is the author of *Axis America*, 1941; *Geopolitics*, 1942; *The Balance of Tomorrow*, 1945.

cially on Britain's positions in southwestern Asia, in order to obtain concessions in Europe. Russian expansionism, although it harvested rich territorial gains in Central and Eastern Asia, did not let itself be deflected from its primary goals; to wit, Russia's strategic frontiers in the West. Indeed, it was the checks to the Russian advance upon Europe, the diplomatic setbacks at the Congresses of Vienna and Berlin and the military defeats in the Crimean War and World War I, which diverted Russia towards such secondary objectives as the Persian Gulf and the Yellow Sea.

That Russian foreign policy has been called riddle and enigma by not a few western observers—including so astute a practicing historian as Winston Churchill—is itself a mystery. Perhaps a partial explanation of this phenomenal obtuseness may be found in a confusion of means with ends. The highly publicized “eastward march” of the Soviet Empire, too, may have beclouded the order or priority of Russian intentions: The Soviet demographic and economic center of gravity is now—and will continue to be for the foreseeable future—in Europe, and the strategic security of the Leningrad-Moscow-Kiev triangle remains the most pressing problem on the agenda of a security-minded Kremlin. There is, however, another source whence Russian foreign policy may have drawn its reputation, on the whole undeserved, for mysteriousness: the attempt to define Russia's “natural” and ethnographic frontiers and to reconcile the latter with the former involves some highly complicated questions rendered doubly perplexing by the ideological language which the Soviet régime affects.

There are only a few places on the globe where almost everyone agrees on the exact location of “natural” and ethnographic frontiers. In the case of Eastern Europe the shape of the lands and the intermingling of races have joined in perverting the questions of Russian “natural” and ethnographic frontiers into dangerously vague and indefinite issues. It is this vagueness, this indefiniteness of Russian territorial aspirations in Europe which appears as so baffling a phenomenon in non-Russian eyes.

The topography of European Russia and East Central Europe

lacks sharp contrast of relief. Viewed from Moscow, Russia appears as the great continental platform from which peninsular Europe extends. Although not strictly a plain, the altitude nowhere exceeds 1,000 feet, with much the greater part below 600 feet. The Valdai Hills towards the northwest of the Russian Platform are the largest elevation in the area between the Ural and Caucasus ranges, the Sudeten Mountains and the Baltic Sea. Westward from Russia the Platform juts into Europe and extends, a gradually narrowing corridor, as far as the Dover Straits. Neither highlands nor deep valleys impede movement across the North European Plain. Nowhere do lofty, extensive mountain ranges supply that topographic demarcation which—together with wastelands and large bodies of water—supplies the basis for defining “natural” frontiers. Nor do the many rivers flowing south or north possess the requisite properties implicit in that essentially strategic term: They do not divide; they were easily forded or bridged in the preindustrial age and offer now at a few places only—for example, the high bluffs rising above the Vistula near Warsaw—some trifling obstacles to modern techniques of river crossing in peace and war.¹

If geography fails to answer categorically the question of “natural” frontiers, ethnography, too, withholds a clear verdict on equitable distribution of territories according to racial and linguistic characteristics of population. The very uniformity of the Russian and North European Platform facilitated indiscriminately the movement of peoples. Every political unit established in modern history upon the eastern plains of Europe has been a multinational and multilingual state.

Although the grand view of the history of eastern Europe discloses a millenarian struggle of Slav and Teuton for domination, the geographical outlines of that contest are blurred by ceaseless intermingling of the two major races and the intrusion or differentiation of minor groups. Slav “pockets” are scattered across Teuton lands as far west as an hour’s rail journey from Berlin

¹ For a concise description of the topography of eastern Europe, see Walter Fitzgerald, *The New Europe* (New York, 1946), pp. 51-60, 68-79.

and as far southwest as the Austrian Alps. Teuton "islands" maintained themselves, until the most recent era of forced mass migration, amidst the Slav tide as far east as the middle reaches of the Volga River. Since Slav has fought Slav and Teuton has fought Teuton about as often and viciously as they have fought each other, residual antagonisms cut so deep across each major group that the very concept of Slav and Teuton "races" as all-inclusive ethnic communities must be relegated to the murky zone of racist mysticism and nationalistic ideology. The inconclusiveness of each and all East European frontier settlements of the last thirty years, based on claims to ethnic justice, is an historic fact. Nearly all were vitiated by unsolved, basically insoluble, minority problems. Nearly all were set aside by force.

The technical and philosophical difficulties involved in defining the western ethnographic frontiers of Russia are illustrated by the ethnic composition of two "debated" border lands: Bessarabia, ceded to the U.S.S.R. by the Soviet-Rumanian Agreement of January 28, 1940; and the territories east of the Curzon line, formerly under the sovereignty of Poland and transferred to the U.S.S.R. by the Soviet-Polish Treaty of August 15, 1945. In the order of their size the five leading population elements of Bessarabia are Rumanians, Ukrainians, Jews, Great Russians, and Bulgarians. None constitutes an absolute majority; nor does the combined total of the Slav population exceed the total of non-Slavs. The area of prewar Poland which has passed to the Soviet Union is 77,700 square miles, with a prewar population of approximately 12,700,000. In the order of size the three leading population elements are Poles, Ukrainians, and White Russians, to which must be added a medley of lesser groups, consisting of Jews, Lithuanians, and peoples of divers Indo-European and Finno-Ugrian stock. No single element constitutes a majority. The statistics of both disputed areas have always been the subject of controversy among scholars and foreign offices. The wishes of the population as regards ethnic justice have never been consulted under conditions precluding the overwhelming pressure of whatever nation-state happened to be in physical control of the

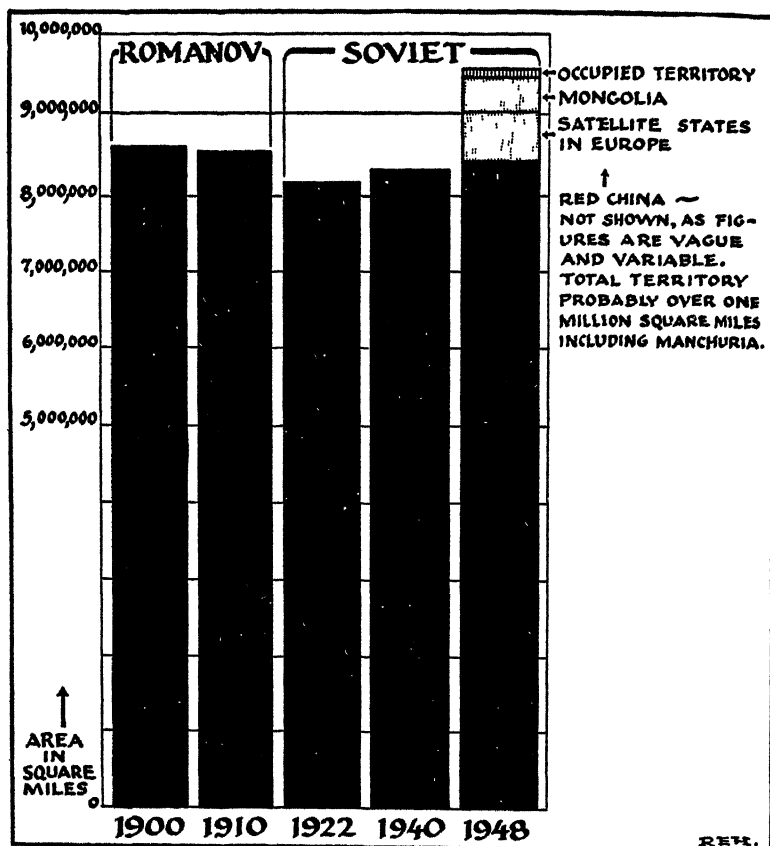


Fig. 14. Fluctuations in Russia's area in the twentieth century. Compared to the bulk of U.S.S.R., they seem to be trifling; but in demographic and industrial terms they are considerable because they have occurred mostly in the relatively well developed west.

disputed areas. The impact of the Second World War with the depopulation, and the extermination and shifting of population, resulting from German invasion and withdrawal has further falsified the none too reliable figures which official publications dignify as statistics. Moreover, statistics, however accurate, fail to reveal cultural, social, and economic differentiations which more often than not suggest territorial decisions entirely at vari-

ance with those arrived at on the strength of a mere counting of noses.

The above, all too brief summary must suffice to indicate the fantastically complex problems besetting the boundary maker in search for the "natural" and ethnographical frontiers of European Russia. In fact, Russian foreign policy has sought neither—although the formal statement of its aims, expressed in the customary historico-legal terminology, fosters the contrary impression. The frontier policies of Russia are dominated by strategic considerations. The significance of the geographical and ethnographical objectives of Russian foreign policy is derived from the strategic concept.

In the eyes of a Soviet strategist the successful defense of the country resolves itself into two main problems: how to prevent an invader from threatening the direct lines of communications between Moscow and Kharkov, which are the life line of the country, or overrunning the two principal areas of demographical and industrial concentration—namely, Moscow and the eastern Ukraine; and how to direct an offensive against the two principal areas whence an attack against the Soviet Union can be launched—namely, the North European Plain and the Danube Valley. The solutions of these two related problems hinge upon the right selection of a boundary zone, rather than a boundary line, suitable for both defensive and offensive operations. In this sense, the new Soviet frontiers represent a synthesis and satisfy the requirements of ambivalent strategy.

The Gulf of Finland and the Dniester River bracket a system of great swamps, lakes, and rivers which, properly fortified and manned, provides unique possibilities for the successful defense in land warfare of vital Soviet areas of population and industry. At the exact center of this protective maze the Pripet Marshes, the largest swamplands in Europe, severely circumscribe the movements of an invading army. The strategic problem is reduced to the defense in the north of the relatively narrow corridor between Lake Peipus and Minsk, and, in the south, of the terrain between the Pripet Marshes and the middle course of the Dniester.

The "forward," or "offensive," line of Soviet strategy runs from the estuary of the Niemen River to the Beskids, the western spur of the Carpathians, and, bending from the southern slopes of the Beskids towards the southeast, to the Siret River and the mouths of the Danube. This line gives control of the area between the Baltic Sea and the Masurian Lakes, gateway to the North German Plain; of the valley of the Bug, which joins the Vistula near Warsaw; of the low passes of the Beskids, historic pathways of transmontane intercourse between the Russian and Danubian plains; and of Moldavia, the passage land between the Southern Ukraine and the Balkan Peninsula.

The new frontiers of the Soviet Union, as fixed by a series of treaties, agreements, and unilateral arrangements, approach more closely the ideal "forward" line than the interior line of defensive strategy. The principal exception is the Soviet-Polish frontier which appears to have been drawn farther to the east than purely strategic considerations may have suggested. A more westerly demarcation, however, would have doomed Poland to the loss of additional historic territories—and to virtual political extinction. The frontier drawn in accordance with the Treaty of 1945 coincides but for minor deviations with the Curzon Line, that is, the line defined and recommended as a provisional limit of Polish administration by Lord Curzon in a note of July 11, 1920. The treaty appears as an honest effort to establish an ethnographical frontier where no satisfactory political frontier has ever existed, and where a strategically desirable frontier would have immensely exacerbated Polish nationalism. It joined several million of Ukrainians and White Russians, whom the Riga Treaty of 1921 had transferred to Polish rule, to their kinsmen living in the two Soviet Republics of the same name. It settled minority issues which the Soviet Union has always viewed as fraught with separatist and counterrevolutionary implications.²

The new Soviet-Polish frontier does, however, satisfy the mini-

² For an analysis of the historic issues underlying the Soviet-Polish frontier dispute and its settlement by the Yalta Conference, see James T. Shotwell and Max M. Laserson, *Poland and Russia, 1919-1945* (New York, 1945).

num requirements of Soviet defense: it conveys to the U.S.S.R. control of the approaches north and south of the Pripet Marshes. Moreover, concessions of Soviet strategy to Polish susceptibilities are compensated for by vital acquisitions to the north and south. One-third of East Prussia, including Königsberg, has passed into the possession of the Soviet Union under the settlement effected by the Potsdam Communiqué of 1945. This acquisition places the Soviet Union in a flanking position as regards the approaches to central Europe and routes of the Baltic Sea, the significance of which cannot be lost on Poland, Germany, and the Scandinavian states. In this case, the Soviet Union has managed effectively to mute the ethnographic note in its territorial aspirations. In the south, territorial accessions obtained from Poland afford the Soviet Union direct communications with Czechoslovakia. In addition, the latter country agreed in the Treaty of 1945 to the transfer of the Trans-Carpathian Ukraine to the U.S.S.R. The Soviet Union, astride the eastern Beskids, occupies a pivotal position in relation to both Czechoslovakia and Hungary. A Russian stronghold is established, for the first time in history, in the Danube Basin.

The mosaic of treaties and agreements, which forms the legal basis of Soviet territorial acquisitions, is composed of strangely assorted pieces. Its general, although somewhat crude, shape was first revealed by the Soviet-German Protocol of August 23, 1939. This document allocated Estonia and Latvia to the Soviet Union and established the demarcation line of the German-Soviet occupation of Poland. The Additional Protocol of September 28 transferred Lithuania to the Soviet orbit and expressed German agreement to the cession by Rumania of Bessarabia to the U.S.S.R. The latter transaction was consummated in the Soviet-Rumanian Agreement of June 28, 1940. The Soviet-Polish Treaty of August, 1945, confirms, except for minor deviations, the arrangements agreed upon in the two Soviet-German protocols. The Rumanian Peace Treaty of 1947 expressly reaffirms the validity of the Soviet-Rumanian Agreement of 1940. The parties to these transactions represent the most diverse ideologies

and allegiances, none of which the Soviet Union permitted to interfere with its pursuit of strategic objectives. Where its frontiers were concerned the Soviet Union managed to overlook the distinction between friend and foe, fascism and democracy, Slav and non-Slav.

Considered as a whole, this strange patchwork of title deeds, bound together by the military might of the Soviet Union, annuls the defeat of 1917. It restores the state to the geographical positions held by the last Romanovs. The Baltic Republics and Bessarabia reverted—as, writing about twenty years ago, Isaiah Bowman predicted³—to Soviet domination; the territorial clauses of the Peace Treaty with Finland, outright cession of the Karelian Isthmus and Petsamo Province, and lease of a naval base at Porkkila-Udd, placed the U.S.S.R. actually, although not formally, in Russia's pre-1917 positions on the Baltic and Arctic coasts; and Soviet magnanimity towards Poland is rewarded by valuable gains in East Prussia, Bukovina, and the Carpathians. The total area acquired by Russia between 1945 and 1947 is approximately as large as the total area lost between 1917 and 1921. The nation has redeemed the hostages she gave to defeat, revolution, and national self-determination.

The western frontiers of the Soviet sphere of influence coincide so closely with those Czarist Russia planned to draw after the defeat of the Central Powers that Czarist and Soviet policies appear to differ as regards methods only. From inter-Allied agreements concluded during World War I and the published statements of leading public figures, notably Russian and Czech, emerges the Czarist Government's Grand Design for eastern Europe: the frontier of Russian Poland was to have been pushed westward towards Stettin, bringing within the Russian Empire the Polish provinces of Germany and Austria; the north-

³ *The New World* (Yonkers, N.Y., 1928), p. 466: "It is true that Russia . . . has solemnly pledged herself to respect the new boundaries; but this is a matter of expediency only. From the nature of her diplomatic relations thus far we can but conclude that, given a favorable opportunity, she would not hesitate to denounce the treaties and reestablish the boundary lines in accordance with her own desire to regain possession of her former outlets on the Baltic."

eastern provinces of Hungary were to be ceded to Russia, and a Greater Serbia and Greater Rumania were to receive additional territories carved from Hungary, leaving the latter country a small state wedged between Serbia (Yugoslavia), Rumania, and a Kingdom of the Czechs ruled by a Russian Prince; and Russia was to receive the European possessions of Turkey inclusive of the Straits. The aggregate of annexed territories, protectorates, alliances, and Pan-Slav affiliations would have extended Russian influence to the Oder River, the Alps, the Adriatic, and the Aegean. The Czarist project, cleansed of the dynastic and social preconceptions of Czardom, took shape in the system of annexed territories, occupation zones, "friendly" régimes and ideological affiliations which constitutes the Soviet sphere of influence in Europe. It is only at the Straits that the Soviet Government failed to attain the goals set by its predecessors.⁴

Certain well defined characteristics are common to the states lying within the Soviet sphere: tested loyalty of the ruling élite, ideological conformity, and coordination of military organizations with that of the Soviet Union. The blend of these features varies from state to state. However, the over-all pattern is one of great uniformity. The small powers of Eastern Europe now constitute a contiguous zone from 400 to 700 miles in depth. Its western boundaries are the true limits of Soviet power.

It can be argued that Soviet policy is inspired by concepts of land warfare as waged in a bygone age, and that mere space offers no protection against an enemy armed with modern air-borne explosives. Indeed, it can be shown that the frontier policies of the Soviet Union flow from ideas on strategy and geography conceived in the nineteenth century and earlier times. The pedestrian strategy of "selling space for time," it is asserted, cannot meet the challenge of nuclear fission, and the Soviet Union could have saved itself the trouble of assembling territories which, no matter how vast, modern weapons can bridge at speeds measured in

⁴ Recent events confirmed David Dallin's remarkable projection of Soviet war aims. His prognosis was based on deductions from Czarist diplomatic history. See his *Russia and Postwar Europe* (New Haven, 1943), particularly pp. 168-170.

minutes. Against this view stands the fact that neither the leaders of the Soviet Union nor those of other Great Powers appear convinced of the decisiveness of any one weapon, however powerful. To the contrary, the advent of atomic and bacteriological warfare may well have reenforced the military advantages of spaciousness, for large space alone affords opportunities for the dispersion of armies and industries. The next war, if it comes, may prove this argument fallacious. In the meanwhile, the new frontiers of Soviet power must be accepted as accomplished facts—accomplished as it were by the forces of historical momentum.

To emphasize the strategic element in Soviet policy is not to belittle its scope. The frontiers of the Soviet sphere of domination are the frontiers of peasant Europe. They coincide roughly with the line of demarcation between the predominantly industrial and the predominantly agricultural part of Europe, between areas of anticipated population decline and anticipated population growth.⁵ There exist to the east of this imaginary line, except for Upper Silesia and Bohemia, no large and mature industrial communities. Neither did industrialization and urbanization, the twin processes which transformed West European society, impinge on the great mass of East European population, small farmers and rural artisans and laborers, and foster the growth of a strong middle class. German policies of expropriation and extermination, the battles of liberation, and the ensuing purges took heavy toll from the ranks of the bourgeoisie, the bureaucracy, and the professional classes. From the leveling tide of war and revolution Eastern Europe emerged as a *tabula rasa* of western civilization.

The collapse of the political and social upper structure did not injure fatally its base, the peasant economy. The situation so created resembles closely the one confronting the Soviet Union at the end of its own Civil War. Its main problems are the inertia as well as the plasticity of the peasant masses, and the creation of a new administrative and managerial élite. They are essentially the same ones the Soviet Union has learnt to deal with by long

⁵ See Frank W. Notestein and others, *The Future Population of Europe and the Soviet Union* (New York, 1944).

experience at home. However, the analogy cannot be pushed too far. The peoples of Eastern Europe have looked for generations to the west for political and technological inspiration. Military and political controls alone cannot perpetuate indefinitely the hold of the Soviet Union on nearly 100,000,000 people who, although prostrated by defeat and foreign domination, are the heirs of ancient and proud civilizations. Eastern Europe, with its long history of struggles for national and cultural independence, cannot be likened to the multinational, yet parochial Soviet state. Centrifugal tendencies, nationalism, world trade, and the urbane civilization of the West, strain against the rigid mold of the Soviet system and Soviet-sponsored social transformation. These tendencies cannot be curbed by force alone—nor by the ministrations of Marxist dialectics. The problem calls for a more subtle, a more creative solution.

The western frontiers of Soviet power are the frontiers of a gigantic laboratory in which the worth of the Soviet system meets its first major test on alien soil. The success or failure of the experiment, not the ephemeral lines of strategic expediency, will supply the true measure of Soviet power in Europe.

II

POPULATION PROSPECTS OF THE SOVIET UNION

By *FRANK LORIMER*

The population of the Russian plain, having been severely checked until a few hundred years ago, began to increase rapidly as soon as the forest-dwelling Slavs established a decisive dominance over the nomadic peoples of the steppes and were thus able to expand the area of agricultural settlement across the Black Soil prairies south toward the Black Sea and east into Asia. The Soviets thus rose to power in a relatively undeveloped territory, occupied by a relatively large but still sparse population. The persistence of feudal institutions and the cultural retardation of the Russian people under the Czars had hampered technical advance in agriculture and the development of industry; but there had been sufficient progress in both fields to provide a basis for rapid advances in a planned economy. The vast distances from the Baltic to the Black Sea, Turkestan, and the Pacific had been spanned by railways. Nowhere else in the world was the combination of resources, population, and initial capital structure so

FRANK LORIMER, born in Bradley, Maine. Ph D, Columbia, 1929. Professor of Population Studies, the American University, and Research Associate, Princeton University. Dr. Lorimer's activities have included service as consultant to the Virginia State Planning Board and several Federal agencies. He has been engaged in the study of population trends in the USSR in connection with a program undertaken by Princeton University in cooperation with the League of Nations.

Author, in association with F. Osborn, of *Dynamics of Population*, 1934; also, under National Resources Committee, of *The Problems of a Changing Population*, 1937.

favorable for a rapid transition from a primitive agrarian economy to a balanced, technically advanced agriculture, industry, and commerce. These potentialities are being effectively exploited in the planned economic development of the Soviet Union. The most critical initial stages of the development had been completed before the German invasion. The force of this initial achievement was revealed in the power of Soviet resistance.

The economic development of Soviet resources is, however, still in its initial stages. The degree of progress is roughly reflected by the change in the occupational structure of the Soviet labor force. A nation with fairly well balanced resources for agriculture and industry in which modern techniques of production are well developed will utilize about a fifth of its labor force in agriculture—as in the United States at the present time. It may be assumed that a few decades hence the proportion of the population dependent on agriculture in the Soviet Union will also be somewhere in the vicinity of 20 per cent. It was still far above this figure at the time of the last Soviet census, in 1939, although it had been cut in the brief span of a dozen years from 76 per cent (December, 1926) to about 55 per cent (January, 1939).¹ The progress of the Soviet Union in the development of a balanced agricultural and industrial economy at a high technological level has, of course, proceeded at varying rates in different sectors. No over-all measure of the degree to which this transition has been effected is possible, but it is important to recognize that the process is still in its initial stages.

The initial reconstruction of economic institutions in agriculture, required for the release of a large number of workers from agriculture to industry, was carried out at great cost during the period of the first five-year plan. The establishment of a basic educational program and the formation of cadres of technicians and skilled workers has been achieved. Some lines of technical

¹ See Frank Lorimer, *The Population of the Soviet Union: History and Prospects* (Geneva: League of Nations, 1946), p. 106. The exact proportion cited here is an estimate, involving a combination and interpretation of official data. Other material presented here, unless otherwise specified, is drawn from this publication.

advance can be continued while the capital equipment destroyed during the war is replaced. As devastated areas are reconstructed, the whole economic program can be carried forward at an accelerated pace.

Postwar economic recovery in the Soviet Union will be somewhat hampered at the start by several peculiar demographic factors. Even in 1940 there were only about 90 males per 100 females among young adults aged twenty to forty-four years. The labor force was augmented rapidly after 1940 by a rising increment of youths, with approximately equal numbers of men and women, born during the middle 1920's when the birth rate was very high. Under ordinary conditions the sex ratio among young adults would have approached a normal balance rapidly. As a result of war losses, the ratio of men to women in the population at the most productive ages must be appreciably lower today than in 1940. Moreover, the increment of youths reaching eighteen years of age will decline after 1946, reaching a low point about 1952—because of decrease in births in the "hard years" of the early planning period when abortion was freely available and was rapidly extended. Soon thereafter, in the late 1950's, the number of youths entering the labor force will rise again to a high level because of the rise in number of births in the late 1930's. After 1960 the annual increment to the labor force will again dip several years because of the deficit in births during World War II.

Apart from official statements about "losses," which are ambiguous in their interpretation, there is no reliable information concerning the effects of the war on the Soviet population, or the number of persons now living within the extended borders of the Soviet Union. The probable effect of the war on the population of the Soviet Union can, therefore, be discussed only in broad, hypothetical terms. All past experience indicates that war, except where it is followed by disorganization, starvation, and epidemics, has little influence on long-time trends in births and deaths. We may, therefore, assume that vital trends in the Soviet Union in the postwar period will follow an orderly development from pre-

war patterns. In order to illustrate the possible effect of the war on the future trend of the Soviet population, the results of an experiment with a purely *hypothetical* figure, that is, 20,000,000 persons as total reduction of population due to the war, is presented in *The Population of the Soviet Union*. In order to apply this hypothesis to the population as previously projected on the basis of expected trends of fertility and mortality, the hypothetical figure was distributed in an arbitrary but reasonable manner among military deaths, civilian deaths, and deficit in births. The population projected without war losses to January 1, 1945, is 189,000,000; the comparable figure adjusted for hypothetical war losses is 169,000,000.² An initial reduction of any given magnitude will, of course, be cumulative in its effects on future population growth. The population within the January, 1939, borders of the Soviet Union as originally projected to 1970 (251,000,000 persons) is on this hypothesis reduced to 222,000,000 persons.

There were about 23,000,000 persons before the war in areas outside its 1939 borders that are now incorporated within the U.S.S.R. The present population of the Soviet Union therefore represents the population normally expected within the 1939 borders (prewar population plus expected natural increase) *minus* war losses, *plus* population in annexed areas *minus* war losses in these areas, *plus* postwar population increase within the present territory. If the actual reduction of population due to the war within the 1939 borders were, by chance, about equal to the hypothetical figure cited in the previous paragraph, the total Soviet population in 1946 must have been somewhat over 19,000,000.

In preparing for the election of February, 1947, Soviet authorities defined election districts, specifying the average number of persons in each district by republics.³ The estimated total

² As a matter of convenience, the total initial loss is applied to the projected figure for January 1, 1945, although this date is prior to the end of the war. The procedure does not appreciably distort the final result.

³ I. Rayeski, "Isbiratelnye Okruga" (Election Districts), *Trud*, Dec. 24, 1946.

population within the present borders of the U.S.S.R. used as a base in this distribution, reported in *Trud*, was apparently 191,600,000 persons. It cannot be assumed that Soviet authorities have exact information concerning the number and distribution of the population now living within the enlarged borders of the nation. In the case of some republics, the 1939 census figure may have carried forward without change. In the case of other republics, however, it is apparent that an attempt was made to take account of boundary changes, migration, and war losses.

The most reasonable assumption with respect to the total post-war population of the Soviet Union, taking into account the present indirect and uncertain evidence, seems to be that deductions due to war and additions through annexation have, in net effect, roughly canceled each other—leaving the population today about equal in number to that normally expected at this time within its 1939 borders. On the other hand, the distribution of the present Soviet population by sex and age must be quite different from that expected without taking the effects of the war into account. The prewar population in the major areas annexed by the Soviet Union was not radically different in character and age composition from that within the U.S.S.R. Also, the proportional increase expected from 1945 to 1970 in the population adjusted for war losses (31.6 per cent) is not greatly different from the proportional increase over the same period in the population as originally projected without consideration of the possible effect of war (32.9 per cent). We may, therefore, obtain a rough hypothetical outline of changes in total numbers and in sex and age composition to be expected within Soviet territory during the next twenty-five years by combining the two projected population series as given in *The Population of the Soviet Union*—that is, applying the proportional distribution of the series with adjustments for hypothetical war losses to the total figures of the series projected without adjustment for war losses. The resultant figures are shown in the accompanying table. This is obviously a crude and unsatisfactory procedure; but no more satisfactory picture can be presented until more reliable basic data are available—and

perhaps not until a census of the present territory is undertaken, and its results are published.

HYPOTHETICAL POPULATION OF SOVIET UNION BY
SEX AND AGE CLASSES, 1945-1970 ⁴

Sex and Age	(IN MILLIONS)					
	1945	1950	1955	1960	1965	1970
MALES						
0-4	10.3	11.7	11.5	11.5	11.4	11.0
5-9	11.9	9.8	11.2	11.1	11.1	11.1
10-14	9.2	11.8	9.8	11.0	11.0	11.1
15-19	10.7	9.1	11.6	9.6	10.9	10.9
20-34	20.5	23.5	26.2	30.1	29.2	31.2
35-49	15.1	18.0	18.2	19.0	21.8	24.6
50-64	7.6	8.4	10.3	12.5	15.0	15.2
65+	3.3	3.7	4.2	4.5	5.2	6.6
FEMALES						
0-4	10.1	11.4	11.2	11.2	11.0	10.7
5-9	11.6	9.8	11.0	10.9	10.9	10.8
10-14	9.2	11.6	9.7	10.9	10.8	10.8
15-19	11.0	9.1	11.4	9.6	10.8	10.8
20-34	25.0	26.6	27.9	30.3	29.0	30.9
35-49	18.9	22.1	22.4	23.1	24.8	26.2
50-64	9.7	11.2	13.8	16.4	19.2	19.6
65+	4.8	5.3	6.0	6.8	7.9	9.9
BOTH SEXES						
All Ages	188.9	203.1	216.4	228.5	240.0	251.4

It is possible that the population prospects of the Soviet Union may be significantly affected by a change which occurred during the war but was not directly related to the war; namely, the establishment of new economic incentives for childbearing by edict of the Supreme Soviet, July 8, 1944. This edict provides for the payment of a premium at the birth of each child beginning with the third child of each mother, and additional payment of

⁴ Assuming total population as projected for U.S.S.R. within 1939 borders but without war losses, and assuming proportional distribution by sex and age as projected with hypothetical war losses. See Lorimer, *op. cit.*, pp. 254-255, 256-257.

monthly allowances, from the beginning of the second to the beginning of the fifth year of the child's life, for each child beginning with the fourth child of each mother. The values of the premiums rise gradually to a maximum level for the eleventh and each subsequent child. A series of honorary medals for mothers was also established by the same edict, ranging in rank from the "Motherhood Medal, Second Class" for mothers of five children to the "Order of Mother Heroine" (Gold Star), awarded to mothers of ten children. The edict also provided increased aid to unmarried mothers, enlarged provisions for child care, and levied special taxes on men aged twenty to fifty years and women aged twenty to forty-five who have fewer than three children. The population projections described above were prepared on the assumption that birth rates and death rates at particular ages would decline from the initial levels of the late prewar period, in conformity with general European experience. There is every reason to expect that the anticipated decline in death rates will be achieved. On the other hand it may well be that social conditions in general and the drastic measures inaugurated for the promotion of childbearing in particular will keep fertility rates in the Soviet Union from declining so rapidly as in general European experience. In that case it must be expected that population increase in Soviet territory will be more rapid than that indicated in these projections.

As is well known, the Soviet territory engulfed by German invasion contained many important factories and the most compact network of heavy industrial facilities in the entire Union. Nevertheless, the division of population between cities and rural districts in the ever occupied territory as a whole was practically identical with that in the never occupied area.

The territory finally annexed is somewhat different from the area incorporated in the U.S.S.R., 1939-1940; but except in the case of the annexed portions of East Prussia and Sakhalin the economic characteristics of the annexed areas are similar to those of the incorporated areas. The most striking characteristic of

these annexed areas is that they are predominantly agrarian—with a high proportion of the population in agriculture, a high ratio of population to cultivated land, and low average income (except in Estonia, Latvia, and the annexed part of East Prussia). The areas ceded to the Soviet Union by Poland, Rumania, and Czechoslovakia had lower average productivity per worker than the remaining areas in each of these countries.⁵ These transfers, dictated by strategic considerations, will increase the agrarian element in the Soviet population and will not contribute much to its industrial development.

The newly acquired agrarian populations can, of course, be absorbed gradually within the expanding economy of the Soviet Union; but it would appear that their accession will initially retard progress toward a higher average level of production and consumption in the Ukraine and Belorussia. These newly acquired areas are, for the most part, similar in their demographic and economic characteristics to areas within the original limits of the U.S.S.R. that were characterized as "population surplus" regions in Soviet literature on economic planning and directed migration. The extension of Soviet territory westward into a relatively overpopulated agrarian zone thus involves, in some ways, a temporary reversal of the movements from farms to cities, and from the west toward the east. On the other hand, the forced movement of industrial facilities during the war from western regions to the Urals, western Siberia, and Central Asia, and the enlargement of the western borders have accelerated trends toward a greater dispersion of Soviet industries and the development of a large network of industrial facilities nearer the center of Soviet territory.

The special pattern of Soviet population in 1939 shows a persistent force of geographical conditions: the declining gradients of the balance of moisture as one passes from the west-central prairies south toward the Black Sea and east toward the Caspian

⁵ Wilbert E. Moore, *Economic Demography of Eastern and Southern Europe*, Geneva: League of Nations, 1945.

and the desert areas of central Kazakhstan; the widening of the zone of permanently frozen subsoil in passing from European Russia toward central and eastern Siberia; the narrow corridor of easily habitable land across Siberia; and the varied, economically important, but relatively isolated regions in and beyond the Caucasus, in Central Asia, and in the Soviet Far East. The 1939 distribution pattern also still reflects earlier important economic and cultural relations between Russia and Western Europe, as evidenced by the importance of Odessa and Leningrad; but between 1926 and 1939 Odessa grew less rapidly than any other large city in the Soviet Union. The 1939 pattern, however, also shows widely scattered new centers of mining, industry, and distribution, including four new cities ranging in size from 71,000 to 166,000 persons in 1939. The largest of these four cities is Karaganda, center of the new coal-mining district in Kazakhstan. The second in size is Magnitogorsk in the southern Urals. The third is Stalinogorsk, a new industrial center in an old European district, Tula. The fourth is Komsomolsk on the Amur. The places already recognized as cities in 1926 which showed most rapid increase during the intercensus period are also widely dispersed, from Murmansk on the Arctic Sea to Stalinabad in the Tadzhik mountain republic of Central Asia, and from the mining-industrial region of the Ukraine to the Urals, western Siberia, and the Soviet Far East. It is apparent that the older pattern of agricultural settlement is being overlaid by more complex patterns representing new industrial enterprises and a new political integration.

People living in places classed as urban rose from 26,300,000 in 1926 to 55,900,000 in 1939, an increase of 112 per cent in twelve years and one month. The proportion of the whole population living in cities in 1926 was only 17.9 per cent—less than the proportion living in incorporated places of 2,500 or more in the United States in 1860. The proportion of the Soviet population reported as living in urban communities in 1939 was 32.8 per cent—slightly less than the corresponding figure for the United States in 1890. There is every reason to assume that the

trend toward increased industrialization and urbanization will continue rapid during the coming decades. The figures again emphasize the dynamic character of recent demographic and economic trends in the Soviet Union, and the fact that the trends, though well established, are still in their initial stages.

New Frontiers in Central Europe

12

THE POLITICAL GEOGRAPHY OF GERMANY AND AUSTRIA

By ROBERT E. DICKINSON

The political frontiers of the German Reich have oscillated through a thousand years of history on the borders of the German-speaking area or *Volksboden*. The main axis of German settlement in the early Middle Ages lay in the Rhineland. The eastward colonization of the thirteenth and fourteenth centuries doubled the area of the *Volksboden*; and on the eastern frontiers in later centuries there emerged the strong "marcher" states of Brandenburg and Austria. Prussia expanded from its Brandenburg nucleus eastwards across the northern lowlands to East Prussia and Silesia, and then turned westward during the nineteenth century, ultimately to annex the whole of the territories of the northern lowlands and the adjacent uplands. Austria severed its connection with the German states after 1866 and turned eastwards, where it became a partner in the great Dual Monarchy of the Danube basin. The Reich of Bismarck came into being in 1871 as a group of states, dominated by Prussia, that included

ROBERT E. DICKINSON, born in 1905 M A, Leeds, 1928; Ph D., London, 1933. Reader in Geography, University of London; Visiting Professor of Geography, Syracuse University. Special fields of research. geographical aspects of human ecology; regional geography of Europe. Studied problems of city, regional and national planning in Germany, 1936-1937. Wartime service in Intelligence.

Author: *Making of Geography* (with O. J. R. Howarth), 1933; *The German Lebensraum*, 1943, *The Regions of Germany*, 1945; *City Region and Regionalism*, 1947; and *The West European City* (in the press).

over 60 per cent of its area and population. The Reich boundaries remained fixed until after World War I; and within them, in a generation, Germany became the greatest industrial and agricultural producer in Europe, its industrial economy being built primarily on the coal of the Ruhr and the iron of Lorraine, while the agricultural yields of its generally infertile lands were

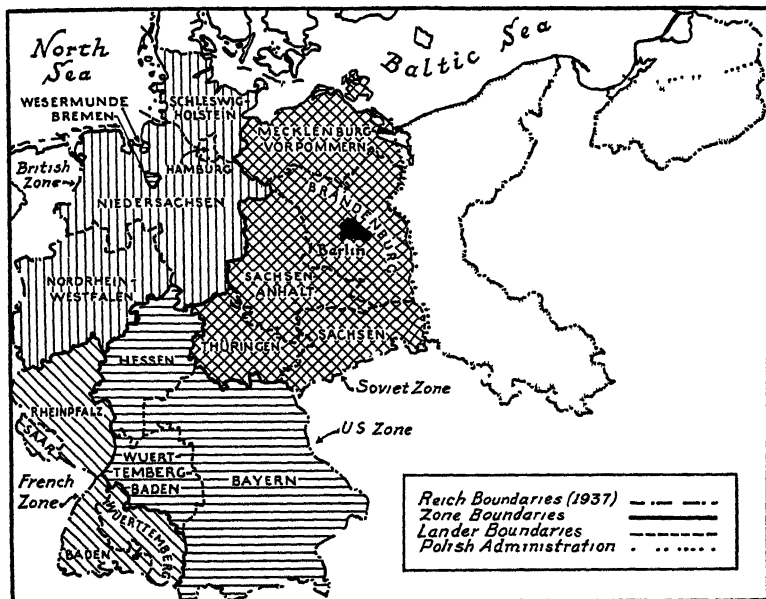


Fig. 15. Germany's division into zones and Länder ("lands"). The latter eliminate most of the fantastic boundary irregularities and enclaves of the old principalities.

multiplied by the heavy application of chemical fertilizers. The whole of the new Silesian field also lay within Prussian control and developed rapidly after 1871. Population increased from 41,000,000 in 1871 to 65,000,000 in 1914. Then came World War I and the loss of territories to east and west. The Lorraine ore was lost entirely, so that between the wars Germany was obliged to import three-quarters of the ore to feed the blast furnaces of the Ruhr. In the east, three-quarters of the Silesian

field was lost, together with the fertile agricultural lands of Posen and West Prussia. These great losses were made good by the prodigious development of the brown-coal resources near Cologne and in the middle Elbe basin around Leipzig and Halle. The great electric power and chemical plants associated with the open quarries of this latter region formed the nucleus of a second great industrial complex, stretching from Magdeburg right up to the southern frontier in Saxony. The latter area was the seat of a great variety of old-established engineering and textile industries, that depend largely on this brown-coal field as well as on supplies of pig iron and steel drawn from the Ruhr. While the Ruhr and Silesia lay dangerously near the frontiers, this central region enjoyed a safer strategic situation, and its development was begun on a large scale during 1914-1918, continued between the wars, and was greatly accelerated during the recent conflict.

On this background we may consider current changes and problems of the politicogeographical structure of Germany. It is difficult to write on this controversial theme at a moment when vital decisions are still pending, but we shall emphasize certain essential facts of the situation as seen from a geographical point of view, and avoid controversial political issues. The present situation derives from the Potsdam Agreement, and it is to the relevant aspects of its decrees that we must turn as a starting point. Let us first consider the frontiers of Germany.

The Potsdam Agreement accorded to Poland large territories in the east, but envisaged no appreciable changes in the west. The territory east of the Oder and the Neisse, south to the Czech frontier, was placed under the administration of the Polish State. Though "the three heads of Government reaffirmed their opinion that the final delimitation of the western frontier of Poland should await the peace settlement," the Poles (supported by the Russians) in fact do not regard the boundary as definitive but seek to extend it so as permanently to include the lower Oder opposite Stettin and the island of Usedom at the mouth of that river. This land includes the Prussian provinces of Silesia, a slice of eastern Brandenburg (Neumark), Pomerania east of the Oder,

and the south of East Prussia. It includes some of the best farm land of Germany and makes up nearly a fifth of its total area and between a sixth and a seventh of the 1939 population, which then totaled 69,600,000. Wheat, rye, potatoes, sugar beet and livestock are its main surpluses that were marketed mainly in Berlin and the industrial areas of the middle Elbe basin. There is also lost to Germany its small section of the Upper Silesian coal field with a maximum production of about 20,000,000 tons per annum. We may recall that it was on this same eastern frontier that in 1919 the Poles acquired 18,000 square miles of German territory and 4,000,000 people in Upper Silesia (including the bulk of the coal field), and the Polish-speaking provinces of Posen and the Corridor (West Prussia). These areas, however, were historically and ethnographically Polish. The areas recently annexed were entirely German. Over 4,000,000 Germans fled west before the Russian armies in 1945, and the bulk of the remaining 2,000,000 have been deported—their place taken by 3,286,000 Poles to whom a further 500,000 are to be added.¹ No real justification can be made for shifting the frontier of Germany westwards to the Oder-Neisse line—for, though intended by the Potsdam Agreement as a provisional boundary, it is more than likely now to remain as a permanent international frontier. In June 1948, the Polish Foreign Minister told Parliament that Poland's western frontiers were "the borders of peace for the whole world" and criticized a recent

¹ On November 20, 1945, the Control Council completed a plan that provided for the transfer of 6,500,000 Germans who were supposed to remain in Poland (3,500,000), Czechoslovakia (2,500,000), and Hungary (500,000). This movement began in February, 1946, with the transfer of 1,500,000 Germans from Poland to the British Zone and of 1,750,000 from Czechoslovakia to the American zone. The Soviet was scheduled to take 2,750,000 from Poland and Czechoslovakia. The whole plan should have been completed by July, but was not by the end of the year (See *The Times*, "Potsdam Reviewed," June 13, 1946.) By December, 1946, 3,286,000 Poles had been transferred from Poland to the German lands ceded to Poland. This total plus the million who have always lived there gives a present total of 4,286,000. Before the war the same territories had over 6,000,000 Germans; about two-thirds left with the retreating armies in 1945, and most of the others have been deported. About 500,000 Poles are to be settled here from Russian territories. This settlement of devastated areas is described as "an outstanding feat of ingenuity and improvisation" (*The Times*, "Poles' Westward Drive," Dec. 19, 1946).

letter by Pope Pius XII that had condemned the expulsion of 12,000,000 people from house and home. It is significant that this statement by the Foreign Minister coincided with a similar declaration in an influential Catholic weekly in Warsaw in support of the country's new frontiers in the West and of the decision to expel all Germans from lands taken over by Poland at the end of the War. It goes without saying that German public opinion is, and will always be bitterly opposed to this solution of the border question and to the enforced mass migrations. And certainly no German political party will ever accept it.

To the south, the Czechs claim the present frontier, that runs along the top of the Sudetic Mountains, together with certain small extensions so as to include valleys on the reverse slopes, that would extend the frontier about ten miles at the deepest points.² They also claim several localities that were recently occupied by Poland: Kladsko or Glatz, Ratibor and Hlubice. Demands are also made for the free use of the Elbe, Danube, and the port of Hamburg. The much disputed territory of the southern Tyrol, on the south side of the Austro-Italian frontier, is to remain in Italy with the frontier on the Brenner. The Yugoslavs have tabled demands on Austria in another disputed area, the Klagenfurt-Villach district in Carinthia (Slovene Carinthia), that covers nearly 1,000 square miles and includes 180,000 people. As far as the Austrians are concerned this disputed area was decided once for all at the 1920 plebiscite, when a majority (59 per cent) voted for a union with Austria. It is also requested that the Germanization of the Croats in Burgenland cease.

On the western frontier, France wants a federal Germany with an independent Rhineland (vaguely defined), and the Ruhr under international control and politically separate from Germany. The frontiers of Alsace and Lorraine are to be unchanged. The Saar district was extended by a recent French decree beyond that of the 1919-1935 area to extend north right to the Luxembourg frontier on the Moselle (districts of Saarburg and Wadern)

² See article in *The Times*, "Peace Terms for Germany," with map, Jan. 10, 1947.

so that it now includes more than the coal field. This European shuttlecock is German in speech, but its coal is desperately needed by France, whose industrial structure is threatened by lack of fuel. France proposes that the Saar should be politically German, but with a customs and currency union with France. With these claims on the Saar the British government does not disagree; but it is opposed to the independence either of the Ruhr or of the Rhineland, for both Great Britain and the United States favor some kind of federation of German states on the lines which they have followed in their zones.³

Belgium, Luxembourg, and Holland claim minor territorial adjustments. Luxembourg wants her eastern frontier to be advanced by 1 to 5 kilometers so as to permit the construction of a dam on the Our River. Belgium demands a small adjustment so as to bring the whole of the railway from Eupen to St. Vith within its territory. Holland demands a narrow strip of land on its eastern frontier, which would include a small oil field at Bentheim and a small coal field at Venlo and would affect 100,000 people. To assist the reclamation of the Dollart, Holland also demands the eastern bank of the Ems estuary and the island of Borkum, which would permit the diversion of the river exit; but Emden would remain in German territory. Both Belgium and Holland ask for guarantees that traffic will not be diverted by preferential

³ Georges Bidault, "Agreement in Germany: Key to World Peace," *Foreign Affairs*, July, 1946 Mr. Byrnes made it clear in his speech at Stuttgart that "the United States will favor such control over the whole of Germany, including the Ruhr and Rhineland, as may be necessary for security purposes. But it will not favor any controls that would subject the Ruhr and the Rhineland to political domination or manipulation of outside powers." (See discussion in Buel W. Patch, "Future of Germany," *Editorial Reports*, Vol. II, No. 17, Oct. 23, 1946, Washington, D. C. The creation of a Ruhr territory, subject to the control and management of the United Nations, is the latest proposal of the French Government, submitted in a memorandum to the British, United States, and Soviet Governments. Local administration would be in the hands of the Germans in this politically separate territory. Its area would have a base of about 50 miles on the Rhine from Wesel to just below Cologne, its northern boundary on the Lippe River, and its blunted eastern apex in Soest and Lippburg. The French suggest that while industry be restricted, coal production be pushed to a maximum, and this would aim at the growth of the Lorraine iron and steel industries at the expense of those of the Ruhr. (See *The Times*, Feb. 4, 1947.)

treatment from its "natural" routes to their ports, mainly Antwerp and Rotterdam, since hitherto the German *Reichsbahn* has offered preferential rates on its lines, that have diverted traffic to the German ports of Emden, Bremen, and Hamburg.

Denmark has a common frontier with Germany at the head of the Jutland peninsula, but makes no specific territorial demands. She is much concerned about the rights of 15,000 Danes who live in southern Schleswig on the south side of the frontier. A phenomenal immigration of displaced persons to this area since 1945 has added to the stable population of 322,000, including Germans, 319,000 German fugitives who have come mainly from East Prussia.⁴

Quite clearly then, the two most serious matters of political geography on the frontiers of Germany are the annexations by Poland on the eastern frontier and the doubtful fate of the Ruhr and the Rhineland, which are inextricably tied up with the economy of Germany as a whole as well as with that of the neighboring states of Western Europe.

In accordance with the Potsdam Agreement, Germany east of the Oder and the Neisse was put under Polish administration, and the northern sector of East Prussia with Königsberg ceded to Russia, while the rest of Germany was to be under the Allied Control Council, on which are represented Britain, the United States, the U.S.S.R. and France. To each of these Powers was allotted a zone of occupation for military purposes only, and a central German Government for a united Germany was to be established as soon as possible. France (who was not a signatory to the Potsdam Agreement), through her vote on the Control Council, has consistently opposed the execution of this main decision, on the ground that the future status of western Germany should be settled before a central German Government be established. A further Potsdam decree was that "the administration of

⁴ Figures from an article by A. P. Miller in *The Sunday Times*, Feb. 9, 1947. The Danish Government wishes Schleswig to become an independent province with Holstein as a *Land* in the British Zone. The people of Schleswig are swamped in the present *Land* government of Schleswig-Holstein by the German Holsteiners, who are three times more numerous.

affairs in Germany shall be directed towards the decentralization of the political structure and the development of local responsibility." What in effect has been achieved?

The zones of occupation are shown on Fig. 15. The British Zone covers the northwestern sector of Germany and embraces its main heavy industrial areas in the lower Rhineland, the northern plains of heath and moor, the port of Hamburg, and the agricultural (dairying) region of Schleswig-Holstein. The American Zone includes most of southern Germany. Room was made for a French Zone by Britain and the United States after the Agreement, and this comprises two sectors in the southwest. These sectors are joined like an hourglass, by a narrow corridor west of Karlsruhe, so that travel from one sector to the other must go outside the French zone; the two sectors are, in effect, quite separate and this unsatisfactory arrangement the French Government is anxious to have revised. The Russian Zone lies to the east of the western zones, and includes the whole of the middle Elbe basin in central Germany and the land east as far as the Oder and the Neisse from the Czech frontier to the Baltic Sea. In the center of the Russian Zone is Berlin, that is administered in four sectors by the four Powers.

Eastern Germany, defined as the Russian Zone and the Polish administered area,⁵ has a little over a third of the population and a third of the prewar national income and over a half of the cultivated land of prewar (1939) Germany. It was self-supporting in foodstuffs, and exported to western Germany a considerable part of its agricultural production: rye, 33 per cent; wheat, 18 per cent; barley, 26 per cent; oats, 20 per cent; potatoes, 28 per cent. It included the German sector of the Silesian coal field and several smaller, scattered fields that produced together about a fifth of the prewar production, and the great industrial area of the middle Elbe basin in Saxony, Thuringia, and the Prussian province of Saxony and the *Land* of Anhalt, together with Lower

⁵ The following data are taken from L. A. Hoffman, "Germany: Zones of Occupation" and "Austria: Zones of Occupation," *Department of State Bulletin*, Washington, D. C., Vol. XIV, Nos. 354 and 355, April 14 and 21, 1946.

Lusatia in southern Brandenburg. Here was obtained over two-thirds of the prewar brown-coal production of Germany. Western Germany, defined as the British, American, and French zones, had 58 per cent of the population, 70 per cent of the mineral output, 80 per cent of the coal, 50 per cent of the cultivated land, and 40 to 50 per cent of the four major food crops. Production, however, was inadequate for consumption, and deficits to total production were: rye, 35 per cent, wheat, 16 per cent; barley, 25 per cent; oats, 17 per cent; potatoes, 32 per cent. The whole area, it is estimated, needs 4,000,000 tons of grain imports annually to maintain even a low dietary level, amounting to a third of its food energy intake. Only a half of this minimum consumption is being met within the region. These deficits are greatest in the British Zone, whereas the American Zone, being more agricultural, is in general more self-sufficing. The total population in 1945 was 43,700,000, a tenth larger than in 1939, and with the transfer of German population from the east it is possibly now a fifth larger. Behind these bare figures lie several basic facts that need to be emphasized in assessing the German situation. First, northwestern Germany is vitally dependent on imports of foodstuffs and animal feedstuffs from abroad. Second, the industrial areas of the middle Elbe basin, southern Germany, and Berlin depend on pig iron, steel and coal from the Ruhr; and the industrial areas of northwestern Germany, with their nucleus in the Ruhr, depend on the finished products, especially machinery, of these other German areas, especially the first. Third, the American Zone is mainly self-sufficing in foodstuffs; and fourth, eastern Germany is an exporter of large surpluses that go normally to Berlin and the middle Elbe basin, and in much less degree, to western Germany. Finally, the iron curtain that at present separates the western zones from the Soviet Zone divides essentially interdependent areas, and it can be safely stated that the normal activities of the two halves depend on the resumption of normal trade relations between them. Moreover, the boundary cuts through the Elbe basin above Hamburg and so separates the middle Elbe industrial complex not only from western

Germany but also from Hamburg, which is its normal outlet overseas.

The postwar economic condition of Germany is affected both by the separation of the western zones from the Russian-occupied zone in the east, and by the policy of reparations. A report issued by the United States Military Government⁶ estimates that the Soviet Union received during the last quarter of 1946 probably more than half of the total net production in its zone; and this same ratio may be extended to cover the whole of 1946 and 1947. The eastern zone, however, according to the same report, had an agricultural output sufficient to meet its own demands and was not nearly so dependent on exports as the bizonal area in the west; and the prospects were not bright for the realization of the great export-import plan drawn up in the merger of 1946, because exports in the bizonal area were not likely to reach one-tenth of the two billion dollars estimated as necessary for a self-sustaining economy.

Let us now consider the politicogeographical structure of each zone. After 1871 the Reich contained a heterogeneous group of twenty-five *Bundesstaaten*—four kingdoms, six grand duchies, five duchies, seven principalities, and three republics. These ranged from Prussia, covering 134,600 square miles with 24,700,000 inhabitants, to Schaumburg-Lippe with 131 square miles and 32,000 inhabitants. The territories of the smallest states were split up into separate and irregularly shaped segments, and there were numerous enclaves of territory embedded in the territories of other states. The consolidation of these outmoded divisions and the formation of new political units was much discussed in the early years of the Weimar Republic; but efforts were abortive, and Prussia continued to dominate the Reich. There were now, however, after the consolidation of the new state of Thuringia, only eighteen *Länder*, and these were reduced to seventeen with the absorption of Waldeck by Prussia in 1929.

⁶ "Economic Data on Potsdam Germany," prepared by Saul Nelson for the United States Military Government. Described in the *New York Times*, Nov. 10, 1947.

These were as follows: Prussia, Bavaria, Saxony, Württemberg, Baden, Thuringia, Hesse, Hamburg, Mecklenburg-Schwerin, Oldenburg, Brunswick (Braunschweig), Anhalt, Bremen, Lippe, Lübeck, Mecklenburg-Strelitz, and Schaumburg-Lippe. Prussia had thirteen provinces (Berlin excluded), each roughly corresponding in area with that of larger *Länder*. The formation of geographically compact and homogeneous units was essential, and all kinds of nation-wide and regional organizations adopted such divisions. The Nazis wiped out many of the small enclaves, notably in the Hamburg-Lübeck area, where they also created a new political unit, Hansestadt Hamburg, to include the whole of the urban complex of which Hamburg is the major partner. They also organized compact units for purposes of planning and party organization. It will be clear that some of these *ad hoc* divisions had no existence as political divisions, and probably one of the greatest changes that the Allies have introduced into Germany is the formation of units of this order as states. Thereby they have also, once for all, abolished the Prussian state.

We have elaborated elsewhere the concept of a region as an entity bound together by common interests of history, economy, and organization.⁷ Regions of this kind have long been recognized in Germany and have been used for numerous divisions of the Reich. Rhineland-Westphalia is the northwestern section of Germany with its nucleus in the great populous area of the Ruhr. Niedersachsen (Lower Saxony) has its nucleus in the Prussian province of Hanover and its capital in the city of Hanover. Mitteldeutschland lies in the middle Elbe basin and includes the *Länder* of Saxony, Thuringia, Anhalt, and parts of Brunswick and the Prussian province of Saxony; it is equal in importance to Rhineland-Westphalia in the economy of the Reich. The Nordmark normally comprises Schleswig-Holstein and Mecklenburg, but sometimes includes Pomerania, that normally appears as a separate unit. These three Prussian rural provinces appear in varied combinations with one another and with their neighbors. On economic and cultural grounds Schleswig-Holstein is closely

⁷ Robert E. Dickinson, *The Regions of Germany* (London, 1945).

allied with Lower Saxony (Niedersachsen) and Hamburg. The *Länder* of Baden and Württemberg together form one unit, with their dominant centers in Stuttgart and Mannheim. Similarly Bavaria (without the Rhenish Palatinate) forms a unit with its two main centers in Nuremberg and Munich. In eastern Germany, the Prussian provinces of Brandenburg (centered on Berlin), Pomerania, East Prussia and Silesia have been used consistently as regional units. The lower Weser and the lower Elbe, with their great urban agglomerations of Bremen and Hamburg—each with a long tradition of political independence—normally figure as separate units, although both have close affinities with Lower Saxony and Schleswig-Holstein. Most of these natural provinces of Germany have found expression in the new states, or *Länder*.

Within all four zones there came into existence during 1946 sixteen entirely new states, with new constitutions or governments formed or in process of formation by election.

In the American Zone there are three new states: Bavaria, coextensive with the prewar *Land*; Württemberg-Baden, consisting of the two *Länder* minus the sectors which lie in the French Zone; and Greater Hesse, an entirely new division established in an official proclamation by General Eisenhower on the 27th of September, 1945, and broadly including the major parts of the *Land* Hessen and the Prussian province of Hesse-Nassau.⁸ At the end of June, 1946, the first state-wide elections were held, for members of constitutional assemblies in the three new states; and Parliamentary elections on the constitutions framed by these assemblies were held on November 25, 1946, in Württemberg-Baden, and on December 1st in Hesse and Bavaria. These three states now have full representative governments, and their Prime Ministers meet in regular conference. (A council of the German Minister-Presidents of the three states was created as early as October, 1945.) Bremen, since January 1, 1947, a fourth American *Land*, includes Hansestadt Bremen and Wesermünde, while

⁸ This is now divided into three *Regierungsbezirke* of Kassel, Wiesbaden, and Hesse.

the territory surrounding this enclave is the responsibility of the British Military Government.

These political developments have been tardier in the other zones, where no elections were held until September, 1946. In the British Zone, the new *Länder* are as follows: Nordrhein-Westfalen includes the former *Land* Lippe, the Prussian province of Westphalia (Westfalen), and the northern half of the Prussian province of Rhineland that lies in the zone. Lower Saxony has its nucleus in the Prussian province of Hanover, and includes also the *Länder* Oldenburg, Schaumburg-Lippe, and Brunswick; and the Bremen enclave is merged with it for administrative purposes. The Hansestadt Hamburg is a separate *Land*. There has not been uniformity of political development in these areas. Provisional governments were nominated by the British Control Commission in Schleswig-Holstein, Nordrhein-Westfalen, and Lower Saxony in December, 1946, pending general elections that were held in April, 1947; and there is an elected government dating from October, 1946, in the *Land (Stadt)* Hamburg. In a federal Germany, Bremen and Hamburg raise special problems; and, in order to secure a better balance of numerical strength between the component states, it would seem advisable that Bremen join with Lower Saxony and Hamburg with Schleswig-Holstein.

Similar developments of particular interest have recently taken place in the Soviet Zone with some significant changes in boundaries. The bulk of the zone falls into several major Prussian provinces; only in the Elbe basin was there a notorious interdigitation of politics and territories, and the new arrangement has consolidated this area. Municipal elections were held in September, 1946, and *Kreise* and *Länder* elections on October 20, 1946. The Soviet has raised strong objections to the creation of new states in the western zones, since this reveals a policy of federalization rather than of unity for Germany; yet it now seems to be pursuing a similar policy in its zone, for the major administrative divisions have now emerged as self-governing states. Their newly elected assemblies, meeting in mid-November, 1946, urged the unification of Germany but claimed—obviously with the support

of the Soviet Government—the right to maintain their new constitutions within this unity. It is important to notice the extent of these new states (*Länder*), which, like those of the west, will form the framework of the new political map of Germany: the Prussian province of Mecklenburg with Vor-Pommern (excluding Stettin and a strip on the western side of the lower Oder that is administered by the Poles); Brandenburg, without the eastern section (Neumark) that lies in the Polish area; Thuringia; the old *Land* of Saxony south of Leipzig; and Sachsen-Anhalt in the middle Elbe basin—including the Prussian province of Saxony and the *Land* of Anhalt, with various small outliers of Thuringia—that has its capital in Halle. Reports indicate that this territorial consolidation on the frontiers has been reached in large part through the joint decisions of the German governments of Thuringia and the province of Saxony.⁹

The French Zone includes the southern sectors of Baden and Württemberg in the south, and the *Bezirke* of Trier, Coblenz, and Montabaur (east of the Rhine in the Rhine Massif) opposite Coblenz, and the Palatinate in the north, adjacent to the Saar. The heterogeneous character of the zone, its lack of geographical cohesiveness, and the French demand for an independent Rhineland and a federal Germany, all have affected French policy. The zone is divided into four parts for the purposes of German local government: South Baden, South Württemberg, Saar, and Rhineland-Palatinate (west of the Rhine). At the end of August, 1946, the northern sector excluding the Saar was formed into a new state named Rhineland-Palatinate (Rhein-Pfalz), with its capital at Mainz. Elections for a consultative assembly were to be held on October 13th and a provisional government established before the end of November. *Landtag* elections in the new *Länder* of Baden, Württemberg, and Rhineland-Palatinate were held in May, 1947. There is no doubt that the French

⁹ Thus 12,000 hectares in the *Goldene Aue* passed from the province of Saxony. This area formerly belonged to *Kreis* Sangerhausen and has been allotted to *Kreis* Nordhausen, with which it is more closely allied. This is an example of the kind of transfer that is going on in the new organization of territories.

regard the whole of this Rhineland area as the nucleus of an independent "buffer" state between France and a federal group of German states. South Württemberg and South Baden are essential parts of the states that lie in the American Zone. The French Government approached the United States Government with the suggestion that the two states should be reestablished with Baden entirely under French control and Württemberg under American control. The United States Government rejected the proposal, and some form of joint control is apparently under consideration. The fact is that Baden and Württemberg are old-established political units with close associations with each other which are severed by the arbitrary east-west frontier between the American and French zones. This was obviously a "makeshift" arrangement, and a reshuffling of territory will undoubtedly have to be carried out if the zones continue, in fact, to be units of German government.

We may turn finally to a consideration of the relation of Germany to its neighbor states. To the Allied Control Council fell the task of elaborating the economic principles enunciated in the Potsdam Agreement. A plan was published in March, 1946, on the four basic assumptions that the population of Germany would not exceed 66,500,000, that Germany would be treated as an economic unit, that the western German frontier would be unchanged, and that German exports would be acceptable in the international market.¹⁰ This plan prohibits the manufacture of armaments, aircraft, seagoing ships, heavy tractors, and many chemicals, and reduces the production of steel, light metals, machine tools, heavy mechanical engineering, trucks, and passenger cars to 39 per cent, 54 per cent, 4 per cent, 31 per cent, 67 per cent, and 16 per cent respectively. The Potsdam Agreement sought "to ensure in the manner determined by the Control Council the equitable distribution of essential commodities between the several zones, so as to produce a balanced economy throughout Germany and reduce the need of imports." This

¹⁰ So far, Germany has not been treated as an economic unit, and estimates given above show that the population is well above 66,500,000.

aim, as we have seen, has failed dismally so far, with regard to the interchange of goods between eastern and western Germany. The seriousness of the situation, in which the British have been trying to cope with an area which in its very nature is substantially dependent on imports, has led to the fusion of the British and American zones and to the conclusion of a three-year plan to make the two zones self-supporting. This fusion, however, merely spreads the liabilities, for southern Germany has neither the ores nor the grain to meet the needs of the northwest. The economic unity of Germany and the resumption of imports in exchange for exports of coal and manufactured products is the only solution of the problem.

In 1937¹¹ the Ruhr produced 70 per cent of Germany's iron and steel (80 per cent excluding the Saar), 70 per cent of its coal, and 77 per cent of its coke. The other industrial areas of Germany thus cannot function without it. The Ruhr, since the loss of Lorraine in 1919, has had to import three-quarters of its ores, and half of the imports has been drawn from Norway and Sweden. It is also the chief seat of production in Europe of alloy steels, engineering, and chemicals (based on the distillation of coal). The Rhineland and Westphalia accounted for a third of the value of German exports in 1936—74 per cent of coal, 63 per cent of iron and steel primary products, 39 per cent of non-ferrous metals, 24 per cent of the machinery, and 27 per cent of the chemicals. Denmark, Holland, and some of the central European countries drew more than half of their imports of iron and steel products, machinery, and chemicals from Germany. The percentages of total imports derived from Germany in 1936 were as follows:

Iron and steel products: Turkey, 63; Greece, 63; Denmark, 58; Bulgaria, 54; Holland, 51; Austria 48; Hungary 47; Switzerland, 47; Rumania, 46. Machinery: Bulgaria, Hungary, Italy, Greece, Austria, Turkey, 77 to 62; Czechoslovakia, Switzerland, Rumania, Denmark, Holland, Yugoslavia, 60 to 50. Chemicals:

¹¹ See "Europe and the Ruhr, Planning," a broadsheet issued by Political and Economic Planning, London, Oct. 4, 1946.

Bulgaria, Rumania, Hungary, Italy, Czechoslovakia, 76 to 51; Denmark, Yugoslavia, Austria, Holland, Norway, 50 to 40.

Coal was exported in large quantities to surrounding countries: Belgium and Luxembourg, 6,700,000 tons, or 71 per cent of their total imports; Holland, 5,000,000 or 78 per cent of its imports; France, 6,500,000 or 22 per cent of its imports; Italy, 7,100,000 or 12.8 per cent of its imports; Switzerland, 1,200,000 or 39 per cent of its imports. The coal output of the Ruhr reached a maximum level of 128,000,000 tons in 1937. Production during May to July of 1946 amounted to a rate of 52,000,000 tons of coal per annum and 2,500,000 tons of steel per annum. It seems that under normal conditions an annual production of about 9,000,000 tons of steel will be needed.¹² The original plan fixed steel production at a maximum of 7,500,000 tons and the provisional level of output at 5,800,000 tons. It was agreed at the Foreign Ministers' Conference at Moscow that, as the British Government has always maintained, these figures are too low and should be raised. A maximum annual production of 10,700,000 tons of steel for the bizonal area was announced on August 29, 1947. The report of the European Conference on the Marshall Plan considered that coal and lignite production in the bizonal area would reach 133,000,000 tons in 1947 as compared with 206,000,000 in 1938. The coal export target was fixed by the plan at 45,000,000 tons, which is approximately the 1937 figure. The agreement reached at Moscow for the export of coal from the western zones (Ruhr, Aachen, and the Saar) allowed for 15,000,000 tons in the six months commencing on July 1, 1947, a figure far below the current abnormal demands of the West European countries. This situation was all the more serious since the other great producer and exporter of coal to the West European countries, Britain, was scarcely able to meet its own essential requirements, so that France, in particular, was in an even more serious position than in the interwar period and would be more insistent than ever on the receipt of coal and coke from the Ruhr. It was essential, therefore, for the rehabilitation of

¹² See *ibid.*

the economies of the countries of Western Europe that the productive capacity of Germany be increased as quickly as possible, in order to meet a large part of the European requirements of coal and iron and steel goods of all kinds. The French Government, that was most closely concerned with this matter, urged that the coal production of the Ruhr be increased, but pig iron and steel industrial production be strictly controlled, so that the Lorraine industries might be rehabilitated as quickly as possible with imported coal and coke from the Ruhr

Whatever the political fate of western Germany may be, recognition must be given to the essential interdependence of the heavy industries and the coal fields of northern France, central Belgium, southern Holland, and northwestern Germany, on the one hand, and of the iron-ore fields of Lorraine and their great iron- and steel-making industries on the other hand; to the common interest of these lands in the navigation of the Rhine and in free access to the ports of the Low Countries; and finally to the fact that in the German Rhineland there are three major geographical entities, the lower Rhineland (broadly speaking, the Prussian provinces of Rheinland and Westfalen), the Rhine-Main region, centered on Frankfurt-Mainz-Wiesbaden and including the Pfalz (Palatinate) on the west side of the Rhine, and Baden and Württemberg, which in turn have close common interests with Alsace and Lorraine on the French side of the Rhine. The resumption of normal activities and the future planning of production and communications in these lands, from the Alps to the North Sea, are dependent on the free flow and development of these associations.

This paper does not pretend to assess the current situation in Germany. It is an attempt to assess the geographical foundations of Germany which must be observed in its new politicogeographical groupings and their interrelationships. The main conditions for the rehabilitation of Western Europe are the economic revival of Germany and its incorporation into the comity of European nations. The two primary needs are recognized in the inclusion of western Germany (the bizonal area and the

French Zone) with the sixteen states that seek aid from the United States, and in the common policy of the United States and Britain either to come to final agreement with the Soviet Union for the economic and political unity of Germany or to proceed forthwith with the establishment of the western zones as a separate state and the speedy revival of its economic life. It is fitting to conclude with the words of Secretary of State Marshall in a speech delivered at Chicago on November 18, 1947:

At the present time industrial production in western Germany is less than one-half of prewar. The food supplies are seriously below the minimum requirements for health and efficiency, and German foreign trade is only a small fraction of its former dimension. In fairness to the American taxpayer who has been contributing hundreds of millions of dollars annually to support the people in the American Zone, Germany must be made self-supporting as quickly as possible.

With safeguards against any revival of German militarism, and swift measures to assure the utilization of the basic products of the Ruhr for the good of the European community as a whole, I believe that Europe and the world will be adequately protected against the danger of future German domination. In these circumstances it should be possible to proceed to the establishment of a provisional central authority in a federated German State and to the final framing of a peace settlement. We shall earnestly endeavor to make progress along these lines.

By the time this article goes to press the cold war between East and West over the future of Germany has entered its crucial stage. The momentous struggle for the beleaguered city of Berlin has now descended into the conference chambers of Paris. At this venture, it would be futile to try to foretell whether the Western powers will succeed in their plans to stay in Berlin and to create a federated German state. Out of the suffering aroused by the crisis of today, the new frontiers of Germany will take shape. In our feeble attempts at discerning their contours we should not underestimate the intangibles

involved, the sentiments, hopes and hatreds of the Germans. A revival of German nationalism directed against what the vast majority of the Germans view today as their merciless enemy, expansion of Slavism and of predominantly Asian forces into Western Europe, would possibly influence the politico-geographical structure of Germany much more than it seems likely today. *Qui vivra verra.*

13

TVA ON THE DANUBE?

By *GEORGE KISS*

The Act organizing the Tennessee Valley Authority was passed by the Congress of the United States in 1933. In brief, the main purposes of the Authority were stated as: maximum flood control; maximum development of the Tennessee River for navigation; maximum generation of electric power consistent with flood control and navigation; proper use of marginal lands; proper reforestation of lands in the drainage basin; and promotion of the economic and social well-being of the people in the river basin.

The objectives, methods, and results of TVA have been debated, discussed, criticized, and praised by students of all phases of its activities. One thing, however, can be said about it: it is, perhaps, of all peacetime agencies organized by the United States government, the best known beyond our frontiers. Whatever the merits or defects of the day-by-day activities of TVA, its achievements, both visible and invisible, on the face of the land and in the minds of the people of the Tennessee Valley are sufficiently permanent to make a lasting impression on visitors to that valley.

In the past several years many writers, administrators, and statesmen suggested that the main principle of the TVA Act,

GEORGE KISS, born in Budapest, Hungary. Educated at the universities of Paris, of Budapest, and Michigan. On the faculty of the University of Michigan since 1940, at present Assistant Professor of Geography.

Author: *Le Problème de la population au Japon*, 1936 (Paris—Japanese translation, Tokyo, 1937); "Political Geography into Geopolitics," "Current Trends in Germany," and other articles on economic and political geography published in Hungarian, German, French, and American periodicals.

integrated development of resources, be applied to other major natural regions, both within and outside the continental United States. The valleys of the Columbia and the Missouri, the semi-arid grasslands of British West Africa, and the great rice-producing lowlands of the Yangtze in China were among those mentioned by the proponents of schemes of regional planning. Throughout the literature of the subject, one area in Europe is mentioned more frequently than all the others: the valley of the Danube.

Although the Danube Valley is a major natural region, with boundaries extending to, and in some places beyond, its watershed, that geographical fact alone would hardly suffice to assure either success or defeat of a planning agency similar to TVA. It is proposed here to discuss the possible objectives that such an authority might accomplish and to compare them with the objectives set by the enabling act of TVA. The results that might be expected will then be scrutinized in the light of what little information is available now on resources, physical environment, and so on. It must be pointed out, however, that although these potential objectives can be within reach of an authority with sufficient vision, extensive powers, and adequate local and international support, they cannot be achieved, nor can the works here suggested be undertaken at all, until a radical change occurs in the political and economic climate of the Danube Valley.

The Danube, greatest river of the European continent west of the Volga, rises in the Black Forest within fifty miles of the Rhine and ends its tortuous course of more than eighteen hundred miles in the Black Sea. Together with the Rhine, the Danube affords a route-way across Europe connecting the great industrial Northwest, with its concentrations of population and industry, and the granaries of central Eastern Europe. Along its course, the river crosses massifs and ranges; it connects a series of rather well defined basins, Bavarian, Viennese, Hungarian, and Rumanian. The alternation of narrows and wide lowlands and the considerable difference between the upper and lower sections of the river both

taries through multiple-purpose dams and other works to further the technical advance of navigation; increase merchandise and passenger traffic on the river; render flood control more effective and generate hydroelectric power. In some districts water from reservoirs might be used for irrigation. Electric power derived from water and other sources would contribute materially to the advancement of agriculture and industry, thus raising the general standard of living in the region. The proposed objectives of such an authority would partake of the characteristics not only of its prototype, the TVA, but also of those of development projects on the Columbia River and the Colorado River.

For hydrographic purposes the Danube may be divided into three sections, each about six hundred miles in length. The upper Danube extends from Donaueschingen, considered as the source of the river, to Devin, just above Bratislava, where the river enters the Hungarian Basin; the middle Danube extends from Devin to the downstream end of the Iron Gate; and the lower Danube, from the Iron Gate to the Black Sea. Up to the present time, navigation for ships of 700 tons' displacement has been possible at all times on the lower section and most of the middle one, but has been subject to seasonal interruptions on the upper section. In the terms of the Danube Statute of 1921, establishing the international regime of the river, the head of navigation lies at Ulm, in southern Germany. Actually, however, navigation for any except the smallest barges is not possible above Regensburg, the principal port of the upper Danube in Germany.

While shoals, meanders, and seasonal differences in the water level impede navigation, sometimes seriously, on the upper and middle sections, the principal bottleneck of Danube navigation has always been in the Iron Gate section of the river. There, the Danube breaks through a chain of mountains extending in a general north-south direction through western Rumania and northeastern Yugoslavia. Between Belgrade and the entrance to the Iron Gate narrows, the average width of the river is 870 yards; in the Kazan or upper narrows of the Iron Gate section,

it is 164 yards. This narrow passage was further restricted when the Hungarian Government, through a series of works undertaken between 1830 and 1900, blasted a navigation channel 58 yards wide through the Kazan gorge and an 82-yard-wide channel through the Iron Gate. The difference in elevation between the upper and lower ends of the Iron Gate section is 82 feet. The combination of a very narrow channel and a considerable difference in elevation results in a considerable increase in the speed of the current—in the Iron Gate it amounts to 10 miles per hour. This makes navigation difficult and expensive; tolls have to be levied to defray expenses, and during peak periods of traffic ships often have had to wait many hours before they could pass through the narrow channel of the Iron Gate. The great canyon of the river, some seventy miles in length, with a channel as deep as 174 feet in parts of the narrows, the high walls on either side—these provide an almost ideal setting for a vast hydroelectric plant. It has been suggested that at least one high dam be built at the downstream entrance of the Iron Gate, with a powerhouse and twin navigation locks. The difference in elevation between the entrance to the narrows and their downstream end, combined with the deep channel, might help to convert the Iron Gate section into a vast storage lake, expedite navigation through locks, and assure a minimum depth of 10 feet for the navigation channel above the narrows as far as Belgrade. The capacity of the dam, which would depend on the storage capacity above it, has been variously estimated from 350,000 to 1,000,000 kilowatts.

There are no major problems confronting navigation on the lower Danube, except in the delta. Here, the heavy load of silt carried by the river makes constant dredging indispensable if the "maritime Danube"—that section of the river between Braila and the Black Sea, some 106 miles in length—is to remain open to seagoing ships. Between 1856 and 1939 the maritime Danube was administered by the European Commission of the Danube, which, functioning as a truly international body with nearly sovereign control over that important part of the river, had a

splendid record that illustrates the efficiency of international administration as long as it is supported by the wholehearted cooperation of all member states

The International Commission of the Danube, instituted by the peace treaties following World War I, functioned as the controlling organization of the "fluvial Danube"—that portion of the river between Ulm and Braila. It devoted considerable time to the study of improvements of the river. Its two basic suggestions may well be adapted as norms for a Danube authority intent upon improving river navigation. They are: the maintenance of a minimum channel depth of 2 meters (6.5 feet) throughout the navigable part of the river, and the regulation of the river to allow, through maintenance of a minimum width and a minimal radius of curvature, the simultaneous passing in both directions of barge trains with units of 1,250 tons each.

To achieve these objectives, regulation of both the Danube and its tributaries is imperative. At present only one dam operates on the main river, at Hofkirchen, Bavaria, where a small powerhouse and navigation locks were built following World War I. The Austrian government is now engaged in constructing another dam on the main river, near Ybbs-Persenbeug, and contemplates the erection of some four others in the Austrian section of the Danube. These, together with the proposed dam at the Iron Gate, would serve as multiple-purpose dams, designed to improve navigation by maintaining a year-round minimum depth, to generate power, and to control flood levels.

Of the tributaries of the Danube, the Morava-Thaya, the Tisza, the Drava, the Sava, and the Prut are all navigable for varying distances; but inadequate depths of the navigation channel and unnecessary detours render navigation hazardous, expensive, and often impossible. Regulation work on these streams and on some of the lesser tributaries of the upper and middle Danube, shortening their course and deepening the channel by dredging, seems advisable, since neither the foreseeable traffic nor the demand for power in the vicinity of the tributaries would justify the construction of navigation locks and dams. In the

interest of flood control, and of generating small amounts of power for local consumption, low river dams on some of the tributaries in Bavaria, Austria, Czechoslovakia, and Hungary may well figure prominently among the tasks of a DVA.

The canal system of the Danube is perhaps the poorest in Europe. The existing canals are shallow, inadequately supplied with water, useful only for local traffic—and for very small amounts of that. During World War I and in the 1930's, engineers, traffic technicians, and military men suggested that the Danube system be integrated with the waterways of the rest of Europe. Of the canals suggested, the connections between Danube and Rhine and between Danube and Oder are perhaps the most important. To replace the existing and almost useless Rhine-Main-Danube Canal, it was suggested that a new canal be built to connect Bamberg on the Main with Nürnberg, Augsburg, and Munich. Crossing the upper Danube on a bridge, this could handle barges up to 650 tons and might become a trunk waterway of Europe, providing a through connection between the North Sea and the Black Sea, and cheap transportation for the cereals and minerals of the Danube Valley to the great industrial regions of northwestern Europe.

An Oder-Danube canal was foreshadowed by the deepening of the Oder to navigable depth on its upper course and the construction of a canal from the upper Oder to the industrial region of Upper Silesia. Silesian coal and metals would find an Oder-Danube canal an inexpensive transportation route; but railroad competition here, as in other areas served by inland waterways, might well militate against expensive works necessary to construct such a canal. Still, the existence of cheap transportation, coupled with a limited amount of hydroelectric power generated by the dams situated on the canal, in a region where there is a sizable demand for power, should be taken into consideration.

In connection with navigation, problems of flood control and irrigation should be mentioned, since they are closely related. Hydraulic and hydrographic research and hydrometric and meteorological forecasting and information are badly neglected

in the Danube Valley, and their establishment on a solid basis will be an important task of a regional authority. In operating reservoirs and hydroelectric plants and preventing major floods, accurate and detailed knowledge of conditions throughout the watershed is indispensable to efficiency. Questions concerning irrigation should also be within the competency of a regional authority. Although most of the Danube Valley receives at least twenty inches of rainfall, the seasonal distribution and periodicity make irrigation desirable in parts of the middle and lower valley. To the knowledge of the writer, only one such scheme is under consideration: the irrigation of some 750,000 acres in the lowlands of Hungary, between the Danube and Tisza rivers, and east of the Tisza.

The costs of developing and maintaining a system of flood control, constructing and operating a major waterway eighteen hundred miles long, and undertaking the surveys necessary to achieve these objectives would be enormous. To lighten the burden, the originators of TVA under rather similar circumstances proposed the construction of multiple-purpose dams, which would not only control floods and ensure an adequate depth in the navigation channel but generate hydroelectric power and thus contribute to amortizing the costs of construction. The experience gained in the operation of multiple-purpose dams on the Tennessee and the Columbia rivers emphasizes three conditions necessary for successful functioning. First, major floods of the river thus controlled should occur at a definite season: floods of the Danube occur mostly in the early spring. Second, large storage capacity should be available at moderate cost: a condition that could be met by limiting dams on the Danube to a very few, and utilizing the tributaries to the utmost. Third, the annual runoff cycle should permit refilling the reservoirs after the flood season: the Danube and most of its tributaries decrease gradually between April and September. Finally, the availability of coal, natural gas, and petroleum should determine the location of hydroelectric plants and the supplementing of hydroelectric

power by, and cooperation of hydroelectric power with, power generated by other sources.

The principal initial concern of a Danube Valley Authority should be the location and integration of "power blocks" rather than the location of individual plants, since the most suitable sites for the latter cannot well be determined until detailed surveys for locational factors have been made. In a discussion of

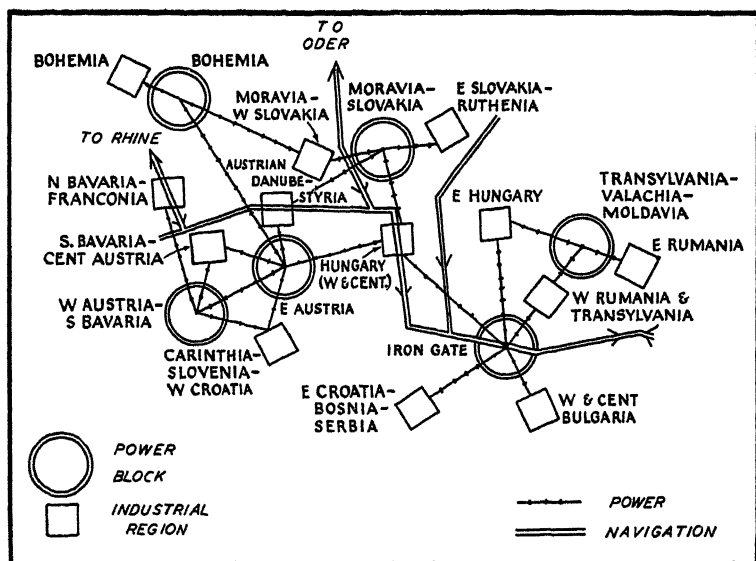


Fig. 17. Diagram of the power and navigation net in the Danube watershed.

"power blocks" and their interconnections, the fact that power cannot at present be transmitted economically beyond a certain distance, ranging from 250 to 350 miles, should be given serious consideration. The loss of power beyond the economic limits of transmission might nullify much of the gain obtained by the operation of multiple-purpose dams.

Within the Danube Valley, it is suggested that the generation of power be centered on six areas, based on the distribution of potential hydroelectric energy, gas, coal, and petroleum. The

first of these would comprise the western provinces of Austria and southern Bavaria, where power would be generated exclusively by water, and used for transportation on German and Austrian railroads and for domestic and agricultural purposes (for example, in dairying). The second area would comprise eastern Austria and southeastern Bavaria, where electricity would be generated mostly by water, and in some existing power plants by steam and natural gas. The Danube Valley group of industries of southeastern Austria and possible new plants in western Hungary and Bavaria would be the principal consumers of this "power block." The third area would comprise most of Bohemia, where power would be generated almost exclusively by steam, and consumed in the great Czech industrial region centered on Prague and Pilsen. The fourth area would comprise Moravia, Slovakia, and Czech Silesia: here power would be generated by low dams on the Oder-Danube, possibly on a new Elbe-Danube canal, by high dams on tributaries of the Danube in Slovakia, and by coal mined in Moravia and Slovakia. The existing industries in this region would absorb part of the power generated here; additional markets would have to include new industries in Slovakia and Hungary. The fifth "power block" would be the Iron Gate power plant. Most investigators of the site believe that the plant, when built, should have a rated capacity of at least 400,000 kilowatts. (The combined capacity of Grand Coulee and Bonneville dams in 1944 was 1,316,400.) Power produced here might be distributed through northern, central, and southern Yugoslavia, with its important deposits of light metals and its rich farmlands; through central and southwestern Hungary, where deposits of bauxite and agricultural industries would provide a ready market; through the basin of Transylvania and the lowlands of Rumania, and the mining district of western and northern Bulgaria, creating new centers of electrochemistry and electrometallurgy, and new agricultural industries. Finally, the sixth area, smallest in installed capacity, would be the mountainous triangle of Transylvania and the adjacent mountain slopes in Walachia, Moldavia, and Ruthenia where natural gas

and petroleum wells and lignite deposits could help create a small "power block," designed to act as an extension of the great center of the Iron Gate.

The amount of power that might be generated by such an integrated system is difficult if not impossible to estimate from the existing data. For the sake of comparison, data furnished by the Austrian government may be used. In 1946 Austria produced about 4 billion kilowatt-hours. When projects now under construction in Austria are completed, the total annual output by 1952-1953 will be approximately 8 billion. In 1944 the Bonneville Power Administration distributed 6.5 billion kilowatt-hours; in 1943 TVA distributed 9.1 billion. Thus, one might hazard that a system controlled by a regional authority would produce several times as much power as major regional systems now in operation in various parts of the United States.

In the marketing of energy thus produced, both present conditions and possible future trends would have to be considered. Rural overpopulation in most of the Danube Valley creates a sizable reservoir of man power. Although the lack of coal and iron ore precludes any immediate enlarging of the plant of heavy industry, the occurrence of a variety of light metals, of natural gas, and of petroleum points toward the development of electrochemistry and electrometallurgy. Agricultural industries could use present and new crops and develop canning and food-freezing plants whose products would be readily marketable in north-western and west central Europe. As in the valley of the Tennessee, research and pilot-plant development should be one of the principal tasks of a regional authority.

Generation of power, flood control, and development of river navigation were the three main objectives set out at the beginning of this study for a regional authority in the Danube Valley. In view of the importance attached to navigation improvements, it might be well to consider the state of Danube navigation prior to World War II, and compare traffic figures with other major waterways. In 1924 total traffic on the Danube was less than

4,000,000 tons; and in the peak year 1936 it was about 7,500,000 tons (exclusive of the traffic on the maritime Danube), less than 10 per cent of the traffic on the Rhine.¹

Competition from railroads and ocean carriers, frontier formalities, technical handicaps due to the poor state of repair of much of the navigation channel were among the main reasons for the small traffic volume on the Danube. While navigational improvements would undoubtedly remove some of the handicaps, only a radical change of economic and political conditions would make this great river a true avenue of trade.

This discussion of the problem of a regional authority for the Danube Valley is primarily geographical; that is, a survey of available resources and their possible utilization with emphasis on distribution patterns. However, in order to ensure proper functioning of the complex and expensive mechanism necessary to accomplish the ends discussed, extensive powers must be given to such an authority.

A Danube Valley Authority, charged with the planning, construction, and maintenance of a system covering 315,000 square miles and involving, directly or indirectly, some 80,000,000 people would have to have strong political backing to fulfill the hopes and aspirations that went into its making. It would also have to command capital resources beside which the \$350,000,000 spent on power developments in the Tennessee Valley between 1933 and 1943 would seem insignificant. Furthermore, such an authority would have to have at its call a vast trained army of technicians and executives, engineers and foremen, geologists and agronomists.

"The original TVA operates in the advanced economic context of the United States, with vast capital resources in the hands of the sponsoring government and equally magnificent technical and managerial resources ready at hand to carry out the work," wrote C. H. Grattan in 1945. Few if any of these prerequisites are found in the Danube Valley today, after the destruction and

¹ In 1937 the traffic on the Sault-Ste.-Marie Canal was 87.6 million tons; on the Suez Canal, 36.5 million, on the Panama Canal, 29.3 million

despair created there by two world wars. Without large-scale financial and technical support a "TVA on the Danube" must remain an empty dream.

The challenge presented is worthy of great effort. The original TVA rose out of the depths of the world economic depression of the 1930's. Can such a process repeat itself? Could the work of a Danube Valley Authority, work of decades, involving vast sums of money and millions upon millions of man-hours, bring a modicum of peace and prosperity to one of the stormiest corners of our planet? This is the challenge of the Danube.

14

THE RISE AND DECLINE OF GERMAN LEBENSRAUM

By SAMUEL VAN VALKENBURG

Limiting *Lebensraum* to the area occupied by the German people—and not the area they dominate politically—this paper is an attempt to show in a sequence of maps the history of the Germans from the point of view of their areal extension.

The Germanic people were already differentiated into various tribes when they were first recorded in history. However, the name "Germans" to designate an ethnographic unit did not exist. Fig. 18 shows the coreland, in what is now Denmark, southern Sweden, and Schleswig-Holstein, whence the tribes extended in all directions. At the time of the Roman expansion into their territory they occupied in the south an area enclosed by the Rhine, Danube, and Vistula, which they had conquered from earlier Celtic and Illyrian populations. In the first two centuries after the birth of Christ, the Romans prevented further advance except to the southeast, where the East Goths reached the Don River and the shores of the Black Sea. From this location the Germanic

SAMUEL VAN VALKENBURG, born Leeuwarden, Netherlands. Universities of Utrecht, Berlin, Zurich (Ph.D.). Geographer of the Royal Topographic Service, Batavia, Java. Professor of Geography at Wayne University and Clark University. Since 1946 Director, Graduate School of Geography, Clark University.

Author: *Economic and Social Geography* (with Ellsworth Huntington and F. E. Williams), 1934; *Europe* (with Ellsworth Huntington), 1935; *Elements of Political Geography*, 1939; *European Jigsaw*, 1945; *Whose Promised Lands?* 1946, *Pacific Asia*, 1947. Editor and co-author. *America at War*, 1942.

tribes later overcame the weakened Roman Empire, covering practically all of southern Europe (with northern Africa), and invading Britain. However, Germanic political control was not coextensive with Germanic settlement. In most areas the Germanic invaders rapidly lost identity, partly because of lack of numbers and partly because of inferior cultural standards.

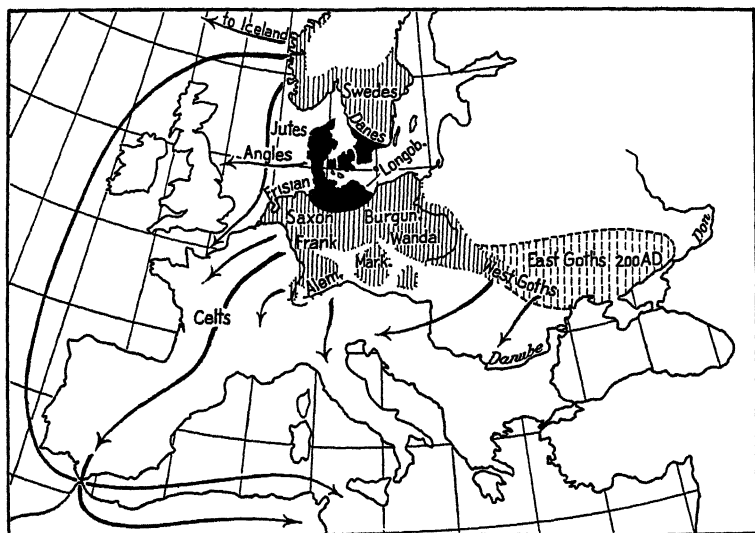


Fig. 18. The "coreland" of the Germanic peoples (black), about 1000 B.C., and their peripheral expansion in the next thousand years (dark shading). From A.D. 1 to 200 expansion was to the east (light shading). Arrows indicate the direction of later migrations.

Fig. 19 shows the situation after the Great Migration. The area occupied at the beginning of the tenth century by the ethnic group, which now gradually might be called German people, was bordered on the west by the language line between the Germanic and Latin languages—which varied only slightly from the present boundary—and on the east by the Elbe-Saale River line. In the south the Germans had reached the Alpine passes, even crossing the divide at the Brenner Pass. To the east, Slavic tribes had followed the western march of the Germanic people and had occu-

pied all the territory east of the Elbe as well as Bohemia and the Great Danube Basin. The Germanic states of the British Isles and of Scandinavia had gone their own way; the line of separation between Germany and Denmark crossed southern Schleswig (the so-called Danewerk).

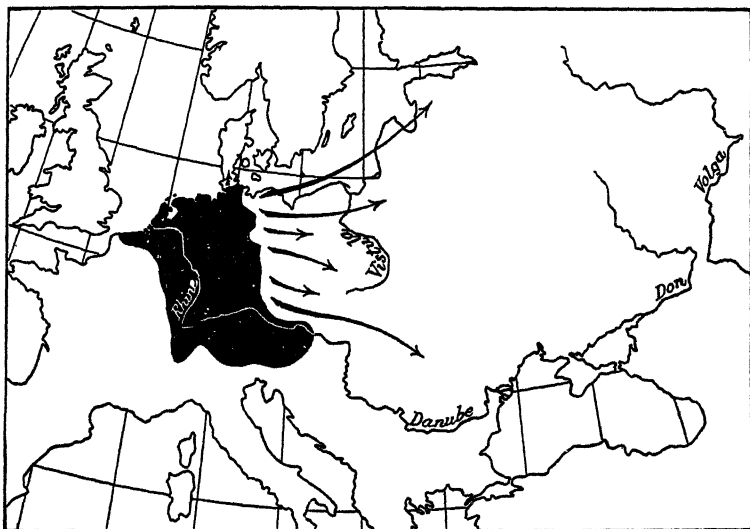


Fig. 19. The Germans in A.D. 900 (black) and the trend of later migrations.

EASTWARD EXPANSION IN THE TWELFTH AND THIRTEENTH CENTURIES

In the twelfth and thirteenth centuries the move was generally eastward, through Brandenburg and Silesia and across the Oder River into Pomerania and West Prussia, connecting for a time with the Teutonic settlements in East Prussia, and the Baltic States, primarily Estonia, Livonia, and Kurland. German settlers also moved into Bohemia, Carinthia, and even all the way into Transylvania in what they called "Siebenbürgen." This time the Germans were culturally superior to the tribes that were living in the occupied zones and either dominated them entirely, leaving

only small remnants (Slavs left in the Lausitz) or retained their German character, although outnumbered by others. The eastern migration stopped in the fourteenth century. The connection between Pomerania and East Prussia was broken by a Polish corridor to the Baltic, but otherwise the area gained in the former centuries was well kept and preserved. Much later—in the eighteenth and nineteenth centuries—the eastward march continued, although on a minor scale. After division of Poland and the Vienna Congress, Germans infiltrated more and more into what was later Pommerellen or western Poland. The industrial development of Upper Silesia brought Germans to the rapidly growing industrial cities, leaving a Polish zone between them and the German area of central Silesia. German groups were also invited to settle in various parts of eastern and southeastern Europe, especially in the eighteenth century when the Danube basin was freed from Turkish control, and when the Russians extended their political control southward toward the Black Sea and the Caucasus.

THE LOSS IN THE WEST

The eastern extension was partly offset by losses along the western border, because certain units broke away from the compact body of Germans. The Swiss broke away first; while a majority of them still speak German and are greatly influenced by German culture, they regard themselves as Swiss, and no longer Germans. The second unit to break away was the Netherlanders, who went farther than the Swiss and developed their own language. After the Napoleonic period, the people of the southern Netherlands, later called Belgium, also disconnected themselves completely. The case of Alsace and Lorraine, which became during the seventeenth and eighteenth centuries a part of France, is different. Although for the greater part still speaking German, they gradually regarded themselves as French. The period of German occupance, 1871–1918, restored German influence; but the break was already too definite to change the sentiments of

most of the population, although on a map of 1914 the area could be indicated as mixed. The case of Luxembourg was the same; before the First World War, Luxembourg was part of the German economic system, but politically and sentimentally independent.

Fig. 20 presents conditions of German occupance in 1914, when it is possible to give actual figures for the scattered outposts. The solid German nucleus was bordered by zones of transition,

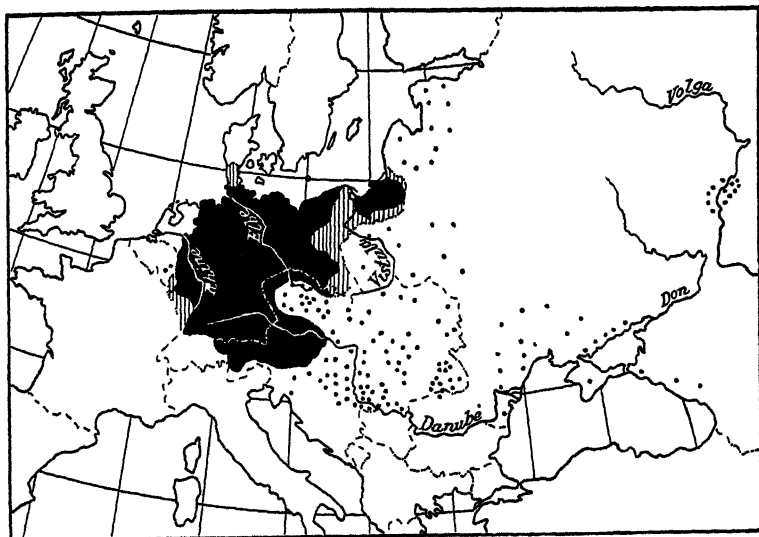


Fig. 20. Solid German occupance in 1914 (black); mixed population within Germany (vertical shading); and other concentrations of Germans (each dot represents 25,000 people).

the result of wars with France and Denmark, as well as of the division of Poland. Opposition of the Poles to further German encroachment had halted German progress. In former Polish sections, the Poles contained roughly 60 per cent of the population, while Upper Silesia also had a Polish majority; mixed were the southern part of East Prussia (Masurian district) as well as Memelland, where most of the population spoke Lithuanian. The number of scattered Germans in Russia was estimated as 1,700,000—200,000 were in the Baltic provinces, 400,000 in

Poland, 400,000 at the Volga, and the rest chiefly along and north of the shore of the Black Sea (Bessarabia, southern Ukraine, Crimea). The number of Germans in the non-German section of the Austro-Hungarian Empire was large also. In the Austrian parts many of them lived in the otherwise Czech zone of Bohemia-Moravia; somewhat fewer than 100,000 had settled in Galicia, and 115,000 in the Bucovina. In the Hungarian part the number is given as 2,000,000 concentrated in the Great Danube Basin, especially along its southern border (Banat) and in the Transylvanian Basin. Small German units were also found in Slovenia, as well as in the Dobrudja. The total number of Germans living outside the coreland can be estimated at that time as being between 4,500,000 and 5,000,000.

THE INTERWAR PERIOD

After the First World War the extension of the "Lebensraum" of Germans in Europe received a number of setbacks. From the former German area allotted to Poland, many Germans emigrated, partly because they so wished but also partly under pressure. The number of Germans in those districts declined from 2,000,000 to 600,000. In Estonia and Latvia, many Germans left because of the expropriation of large German holdings. However, in most other areas of scattered German population there were no important changes. The Germans in these were generally not politically involved and, being an economic asset as a group of high cultural standing, were allowed to remain. In the west the break with Alsace-Lorraine (again a part of France) and Luxembourg, which united economically with Belgium, was definite. Some Germans were left in the part of Schleswig which returned to Denmark, while the loss of Eupen and Malmédy to Belgium also increased substantially the number of German-speaking people in eastern Belgium. Gradually the Germans in sections outside the national boundaries, known within the country as "Ausland" or "Grenzland Deutschtum," were influenced through very active propaganda and pressure by the Nazi doctrine

and became politically active antinational groups in the countries in which they were located. German nationals at that time were extremely active in reclaiming their lost brothers and educating them to regard Germany as the country to which they belonged, and of which they wished to be a part. Politically, the Germans of Austria, Bohemia-Moravia, and Memel were brought inside the realm of the Reich before World War II started. (Figure 21.)

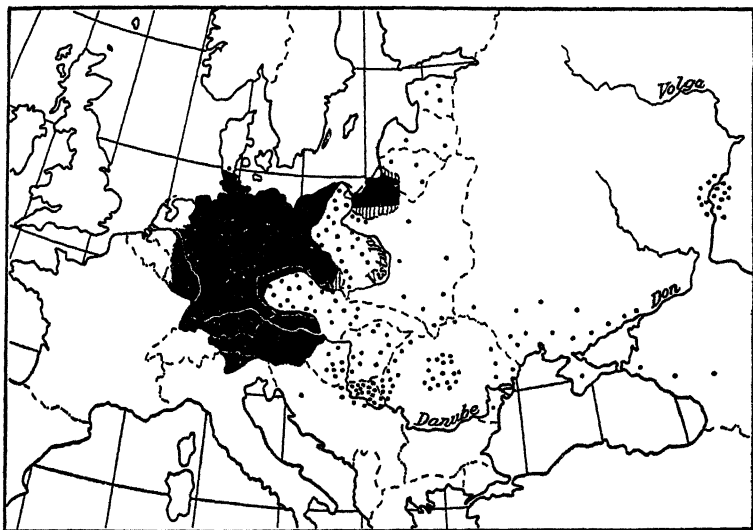


Fig. 21. The German people in 1938 (keyed as in Fig. 20). Note that the distribution of *Auslandsdeutsche* has not changed materially since 1914 except in the west.

THE HITLER PERIOD

The Hitler policy which actively started in 1939 contained three basic concepts:

1. The return of the Germans living in the Russian border zone as well as those of the South Tirol.
2. The Teutonization of the newly conquered territories incorporated into the Reich.
3. The continuation of German scattered occupancy in the Danube realm.

The Return from the U.S.S.R. More than 500,000 Germans were brought back from the Soviet border zone, under the German-Soviet agreement of September, 1939. They came from the Baltic area (130,000), from eastern Poland (200,000), as well as from the Bucovina and Bessarabia (200,000). Added to these were the Germans of the Dobrudja (13,000), although not under any agreement. Most of the returning Germans did not come willingly. Of the Baltic Germans only three-fourths accepted the offer from Hitler. However, the rest followed when the Soviets incorporated those states into Russia (June, 1940).

The Return from Italy. The case of the Germans in northern Italy is very special. During the Middle Ages German peoples did cross the relatively low Alpine passes and settled in the upper part of the Adige drainage system, in what is now called the South Tirol. Except for a short French intermission during the Napoleonic period, when Andreas Hofer was the famous fighter for freedom, the South Tirol was part of Austria until the first World War. In the 1915 Treaty of London, Great Britain and France promised Italy not only the Trentino with its Italian population but also the South Tirol up to the Alpine passes. The Italians called that their geographical boundary. After the war President Wilson, rather surprisingly, accepted the Italian point of view, and the transfer took place against the will of the approximately 250,000 German-speaking inhabitants and against the strong protest of Austria.

The efforts in the interwar period to Italianize the South Tirol—Italy called it the Upper Adige—were only partly successful. Italian officials and Italian names did not hide the existence of violent opposition, strongly backed up by the Austrians beyond the political frontier.

When Austria was overrun by Germany, Hitler inherited the Italian problem. Political friendship between Germany and fascist Italy necessitated a solution. In 1939 an agreement was reached providing that South Tiroleans who wanted to remain German should leave the country and should be compensated for the loss of their property, while those who stayed should indicate

their willingness to become Italian citizens. This drastic solution caused a wave of opposition, but in vain. Hitler sacrificed the South Tiroleans on the altar of Axis friendship.

In January, 1940, the vote was held. Of a total of 229,500, it is reported, 166,488 (73 per cent), voted to leave the land and be settled in Germany. Only a certain percentage (75,000) actually left and were settled in German-occupied land, such as Alsace and Czechoslovakia, before war conditions forced the cessation of the migration.

The Settlement of Germans in Occupied Territories. The settlement of Germans in the occupied territories included those who returned as well as settlers from Germany itself. Five areas were involved: Alsace-Lorraine, Bohemia-Moravia, the new German districts, Danzig and West Prussia, Wartheland and Upper Silesia. In Alsace-Lorraine, 300,000 Germans replaced the pro-French elements. Many Germans even settled in occupied France, chiefly as city inhabitants of Paris. The number of new settlers in Bohemia-Moravia is estimated at 400,000. The major effort for settlement, however, was made in western Poland, especially Wartheland, which was destined to become an area of solid German occupancy in the country as well as in the cities. German families repatriated from the east as well as many from the Reich itself were settled on the land or in the cities. The highest figures were reached in 1944 when the Germans, fleeing from the Russian advance, increased the number of new settlers to about 1,500,000—1,250,000 for Wartheland alone.

The Germans in Southeastern Europe. The number of Germans living in the realm of the Danube was about 1,750,000—500,000 in Hungary, 500,000 in Yugoslavia, and 750,000 in Rumania. They were scattered in Hungary; but in Rumania the major concentration was in the Banat (at the south of the Great Danube Plain) and in central Transylvania, where the major cities were all of German character. In Yugoslavia most of the Germans lived in the southern part of the Danube Plain (the so-called Voivodina). The Germans in southeastern Europe had been highly successful and were regarded as definite assets in each

of the three countries concerned. Economic and social conditions in their towns and villages always were well above the average of the nation in which they were located. Nazi propaganda, however, changed the situation. Educated or forced to be good Nazis, they gradually came to regard themselves as Germans and not as Hungarians, Rumanians, or Yugoslavians; and with the help of German political action they became privileged minorities, van-

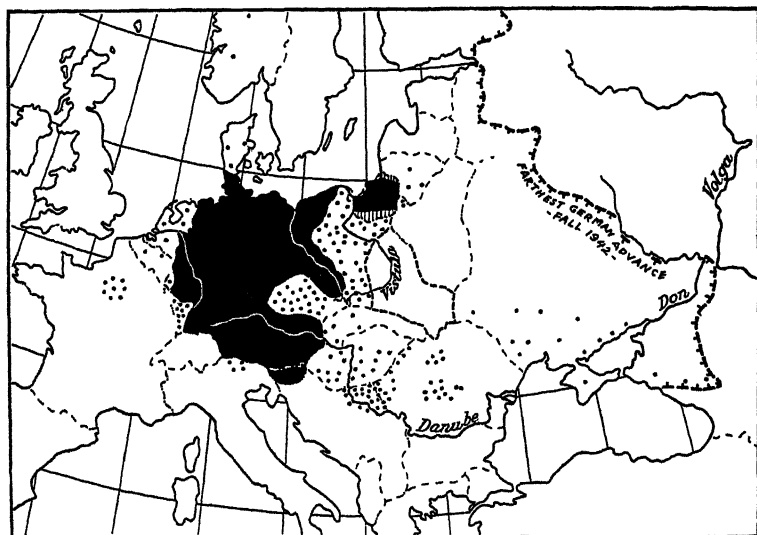


Fig. 22. The German people in 1943. Note the significant changes in the distribution of the *Auslandsdeutsche*, both in the east and in the west.

guards of the doctrine of Nazi supremacy and important elements in the plans for German expansion. The war brought many changes. The return of northern Transylvania to Hungary shifted about 60,000 Germans from Rumania to Hungary, while the Yugoslav area, occupied by the Hungarians, brought about half of the German population under Hungarian control; and 20,000 Germans living in Bosnia and Croatia were taken out and settled in western Poland. (Fig. 22.)

In each case of German settlement the men were called into German military service. While the Rumanian government was forced to accept this fact and continued to regard them as Rumanian citizens (a kind of dual citizenship), Hungary refused to permit its citizens to serve in the German army without losing their rights of citizenship. Only in the last stages of the war, when Germany practically took Hungary over, did the government change its attitude.

The number of Germans domiciled in southeastern Europe and serving in the German army is calculated by Dr. Schechtman,¹ treating the problem very thoroughly, to be about 140,000. Many of them died, and not one returned after the war was over.

The Germans in the Soviet Union. The Germans in Russia proper were not involved in the exchange of population. Those of the southwestern U.S.S.R. were overrun by the advancing German armies and became active supporters or members. The Volga Germans of the Volga Republic, accused of sabotage during the war, were evacuated and resettled in Siberia (August, 1941); and that Republic ceased to exist.

The Retreat. After the debacle of Stalingrad the German front started its retreat, first slowly (1943) and then more rapidly (1944-1945). The first German settlers involved were those in the southwestern Soviet territories, who had cooperated with the invaders. They were taken out in an orderly fashion and settled in the Warthe region of former western Poland. Gradually more and more German settlers became involved, and when the speed of the retreat increased, only a few had time to move back with the retreating armies, many being left behind. Wagons in solid lines packed the roads to the homeland in the effort to escape the Soviet fury. They came from East Prussia and western Poland, from Silesia and the Danube Basin and Bohemia and Moravia, seeking in vain a haven of refuge.

Dr. Schechtman gives some figures telling the story of the

¹ Joseph B. Schechtman, "The Elimination of German Minorities in Southeastern Europe," *Journal of Central European Affairs*, Vol. VI, pp. 152-166 (July, 1946).

German collapse in southeastern Europe. When the Red army occupied Rumania there were only 94,000 Germans left; the others had already been repatriated, or were serving in the German army, or had fled. Most of those who remained were deported to the Soviet Union in spite of Rumanian protests. Only elderly people and children, of no value to Soviet reconstruction, were left.

In Yugoslavia 20 per cent managed to get out in time. Those who stayed were put into concentration camps and may be repatriated to Germany, although many (about 100,000) have already been deported to the U.S.S.R. to work on reconstruction.

In Hungary a large number of Germans fled in advance of the Red army. About 300,000, however, were caught. Differences of opinion arose about what to do with them. The official statement is that each case will be judged on its merits; but even those allowed to stay will be relocated. The greater part will be told to leave, especially since the large number of Hungarian deportees from Czechoslovakia will need space for settlement and the expulsion of the German population would be very convenient.

The Present Situation (see Fig. 23). The map showing conditions in 1947 is theoretical in part. As this is written many Germans in Yugoslavia are waiting in concentration camps for return to Germany. Those of Hungary and Czechoslovakia are in the full process of moving, while the Germans of Rumania have been taken out by the Reds—destination unknown. It is difficult to estimate the number of Germans still in present Poland; probably most of them have been dumped across the Oder River. Only in the South Tirol do we see a return of many of those who had left; the new agreement between Italy and Austria promises those German inhabitants an autonomous position within the Italian state, while remaining closely connected with Austria. But in the summer of 1942, 40,000 of these still were waiting for permission to reenter the South Tirol while the relations between the Italian officials and the local German-speaking population were far from good. But otherwise survey the picture of German *Lebensraum*—in area like that of A.D. 900, although its location has shifted

eastward, now being between the Rhine and the Oder. Another unit is trying to disconnect itself; namely, the Austrians who have lost all their desire, which still existed after World War I, to go the German way.

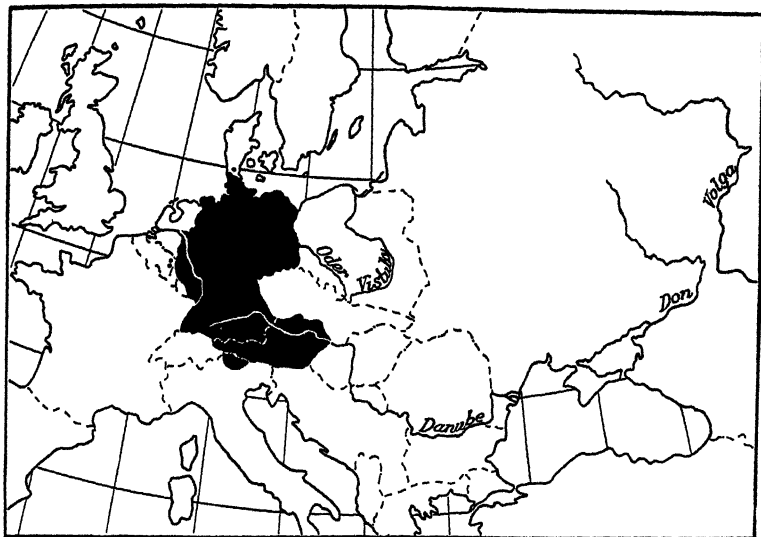


Fig. 23 The German people in 1947 *Auslandsdeutsche* now occur only in Denmark, Belgium, and the Tyrol.

The Future. About 70,000,000 Germans are left in the remnants of German *Lebensraum*, giving a density of population of almost 500 per square mile. It is really now a "Volk ohne Raum" because it is difficult to see how so many can wrest an existence from the area left them, with its definite geographical limitations. The situation will be even worse if industrial development is limited through Allied restrictions. There is danger in the unavoidable despair that will follow. Are there any solutions? The American Government is in favor of returning to Germany certain areas east of the Oder River (Pomerania) because of the German need for agricultural land, while the Poles have scarcely enough people to fill the New Poland. France is taking German workers; other countries may follow. Perhaps the German sur-

plus can be thus taken care of, with the hope that the émigrés will lose identity in their new environment and lose contact with the homeland. A solution must be found. Germany cannot remain a large sore spot in the middle of the European continent. This would prevent any chance of European recovery. However, the dream of German expansion has been dispelled for a long time to come, and the world's answer to the Nazi claim that conquest was permissible because of lack of living space has been a decisive No.

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CHAPTER IV

Strategic Areas and Life Lines

15

STRATEGIC BASES

By HANS W. WEIGERT

The term "strategic base" looms large in the political geography of today. Yet, in spite of the fact that the story of strategic bases and areas deals with a vital issue, it is clouded in haziness and leads us into realms which are, both geographically and politically, unexplored land. What little has been written on the subject is mostly biased and partisan in character. This need not surprise us. No analysis of strategic bases can avoid discussing problems which are of vital importance to the national security systems of the remaining Great Powers. Their invisible frontiers are overlapping everywhere. It is in those areas that more and more cradles of future conflict have come into being and threaten the peace of the world.

From the American standpoint, the story of strategic bases is a new chapter to Frederick J. Turner's concept of "the passing of the American frontier." We cannot understand the political geography of strategic bases under the flag of the United States, unless we first clarify certain new concepts of this country's frontier and security zone. This leads to a reexamination of the geographical foundations of what has hitherto been considered

HANS W. WEIGERT, born in Berlin, Germany. Dr. juris utriusque, University of Freiburg, 1926. Formerly Professor of Geography and Political Science in various universities and colleges; at present consultant to the United States Military Government in Berlin, Germany.

Author: *German Geopolitics*, 1941; *Generals and Geographers: The Twilight of Geopolitics*, 1941; articles on political geography and international relations. Coeditor: *Compass of the World*, 1944.

as the central pillar of our security system, the western hemisphere.

At one time President Roosevelt used to speak of "this hemisphere" or of "the western hemisphere" as if it were a clear regional concept permitting us to define geographically how far the United States would go in defending and stabilizing its security zone. That was in the days when the American people were just awakening to the necessity of measures of defense. Now few can believe that the zone of North American security is that which was accepted, almost as a law of nature, from the time the Monroe Doctrine warned, "Hands off the western hemisphere."¹ What is the western hemisphere? Where are its frontiers? The idea to which we are adjusting ourselves is that the frontiers of our national security zone lie wherever American interests are at stake, and that they reach anywhere that peace is endangered. It means that as a yardstick for determining the extent of our security zone, the Monroe Doctrine has crumbled.

THE MYTH OF THE WESTERN HEMISPHERE

Even after the Petropolis Reciprocal Assistance Treaty of September 2, 1947, it is impossible to give a geographically concise definition of the western hemisphere and its boundaries. The treaty aims at laying the groundwork for concerted action, by the signatory powers, against aggression threatening the peace of the western hemisphere. Consequently, the boundaries of the new powerful hemisphere bloc had to be redrawn. The result is a protective edifice which may, in counterbalancing the sphere of interest of the Soviet Union, grow into a political reality. In terms of geography, the new frontier remains a *Fata Morgana*; for the audacity with which the boundary makers solved their problem was tempered by the political climate of the hour. While the treaty tries to protect the

¹ Cf. Eugene Staley, "The Myth of the Continents," *Compass of the World*, pp. 89-108; S. W. Boggs, "This Hemisphere," *Department of State Bulletin*, Vol. XII, pp. 845-850 (May 6, 1945).

safety of the American republics by including in their sphere the entire American land mass, Antarctica, the Aleutians, Newfoundland, and Greenland (in spite of Denmark's determination to maintain her sovereign rights), Iceland was left out; for at the time the treaty was drafted the danger that these fictitious boundaries would overlap with those of the Soviet sphere seemed even greater here than elsewhere. The western hemisphere remains what it was, a myth.²

TERMINOLOGY OF STRATEGIC BASES

Another barrier to the understanding of the strategic base issue must be seen in the fact that considerable confusion prevents a clear definition of the term "strategic base." The following example is a case in point. At a press conference in September, 1945, H. Struve Hensel, then Assistant Secretary of the Navy, stated that the United States, commencing in 1940, built 434 war bases of various dimensions: 195 in the Pacific area, 11 in the Indian Ocean and the Near East, and 228 in the Atlantic area (18 of which are in the North Atlantic, 67 in the Gulf of Panama

² In correspondence, S. Whittemore Boggs of the United States Department of State has suggested an interesting new solution of the hemisphere dilemma. This consists in boiling down the "western hemisphere" to an "American quarter-sphere." The boundaries of the latter are arrived at by taking the western half of a hemisphere centered in the Atlantic Ocean at 28° north, 31° west. The dividing center line deviates slightly from true north and south, passing through Denmark Strait (between Greenland and Iceland) and just east of the bulge of Brazil. The quarter-sphere to the west of the line contains all of continental North America, the islands to the north, a piece of eastern Siberia and all of South America. Latter-day Mahans will undoubtedly object to this arrangement because it omits Iceland, most of the Aleutians, the Hawaiian chain, and Antarctica. They would further object to its exclusion of most of the Atlantic and Pacific oceans.

It is fairly certain that no arbitrary imposition of a geometrical form on the tortured configuration of the continents will result in a satisfactory definition. We prefer to eschew geometry and accept the more sensible solution offered by geographical considerations; namely, to make the boundary lines follow the center of the waterways which separate North and South America from the other continents. Such a solution is likewise acceptable to statesmen, except where the inclusion, exclusion, or truncation of Antarctica is concerned. The atlas makers are the real creators of this artificial dilemma—they cannot free themselves from the ancient habit of dividing the world into two symmetrical halves.—THE EDITORS.

and the Caribbean, 25 in the South Atlantic, 55 in North Africa and the Mediterranean, 63 in Great Britain, France, and Germany). The inclusion of 63 bases in Great Britain, France, and Germany in these naval statistics points to the necessity of a study in the semantics of the term "base." Much fallacious thought on the subject results from an uncritical assumption that "base" is more or less synonymous with "port." Thus the term "strategic base" is usually associated with the idea of an insular area, or of a beachhead in foreign territory. But bases are not only overseas but overland, too, as in the important case of what might soon become a vital United States defense frontier in northern Canada. The occupied countries of Germany, Japan, Korea, Italy, and Austria, or the territories of nations within the Anglo-American defense orbit, are not associated with the term "strategic bases." But a sound analysis cannot differentiate between island bases and beachheads, and other foreign territories available for military operations. Thus the complete story of American bases should include an appraisal of the role which, for instance, Japan and the American zones of occupation in Germany, Austria, and Korea play within the framework of a United States security system of today and, possibly, a United Nations security system of tomorrow.

We should be dangerously mistaken if, in analyzing the strategic bases of the Soviet Union, we limited ourselves to a discussion of the Kuriles, or her bases in Finland, or Kaliningrad (the former Königsberg), or to the appraisal of her actual or possible demands for bases in the Dardanelles, in Eritrea and Tripolitania, or on Spitsbergen. To complete the picture of the strategic bases of the Soviet Union we must include Germany east of the Oder-Neisse frontier, as well as northern Korea. We must also include the entire belt of nations within the Soviet sphere of influence, both in Europe and in Asia. To fail to perceive the full meaning of the term "strategic base" is to misjudge completely the relative power positions of the United States and the U.S.S.R. If one should limit the appraisal of bases to those which come under the classification of islands or ports, and com-

pare the strongholds of this nature maintained by the United States with those under the Soviet flag, one would reach the erroneous conclusion that the Soviet Union has shown considerably more restraint than the United States in establishing bases. Henry Wallace seems to have been a victim of this generous but dangerous error when, in his letter of July 23, 1945, to President Truman, he claimed that "up to now, despite all our outcries against it, their [the Russians'] efforts to develop a security zone in eastern Europe and in the Middle East are small change from the point of view of military power as compared with our air bases in Greenland, Okinawa, and many other places thousands of miles from our shores." The Soviet Union, in fact, found ample compensation for the lack of opportunities overseas by establishing bases in lands directly adjacent to hers, either by military occupation or by the collaboration of friendly governments in her spheres of interest.

THE ANGLO-AMERICAN BASE SYSTEM

Our naval and air bases are usually classified in three groups: permanent operational bases which are to be fortified and garrisoned with sufficient strength to hold against a major attack until relieved from the continental United States; limited operational bases, which will be used chiefly for aerial reconnaissance; and emergency bases, which need not be garrisoned in normal times, but which we should be entitled to occupy should an emergency arise. In the first category are the following bases: Kodiak, Hawaii, Guam, Saipan, Bonin, Volcano, Palau, Ryukyu, Leyte, and Manus in the Pacific; Guantánamo, Puerto Rico, Virgin Islands, and Trinidad in the Atlantic; and, of course, the Canal Zone. As limited operational bases, Attu, Midway, Truk, and sites in the Philippines, French New Caledonia, Guadalcanal, Peru and the Galápagos (which belong to Ecuador) have been named. Emergency bases are planned in Dutch Harbor, Canton, in the Bermudas, and throughout the Caribbean area. It should be noted, however, that many of these bases are primarily naval

bases. Among the additional air bases, Iceland and sites in Greenland, the Azores and further bases in the Caribbean are outstanding.

In order to understand the impact of the world-embracing chain of strategic bases which protect the security of the United States, we must realize that this security zone at present includes, for all practical purposes, the impressive chain of strategic bases under the flags of the British Commonwealth of Nations, beginning with the British Isles (except Eire). The British and American base systems are closely interwoven, and their full implications can be evaluated properly only if this is remembered. It is significant to note that Britain is blueprinting a new defense system for her empire based on the supposition that in another world war sea power, and strongholds in the Mediterranean, would no longer safeguard the life lines of the Commonwealth. In the new system, the center of gravity would shift from the Mediterranean to the Indian Ocean, and through the heartland of Africa to the Atlantic bulge of West Africa pointing toward America. Here the British system of defense almost links with the United States bases in Latin America, especially those in Brazil, Cuba, and Panama—parts of a defense system the United States has steadily broadened for years, which still stands in spite of the fact that many of the bases were returned to the Latin American republics after the war.³ Cognizant of the fact that the Mediterranean may become too vulnerable in atomic and rocket warfare, Britain's

³ In December, 1947 (when this paper was completed), a dangerous and obscure development prompted the evacuation by the United States of her outer zone of defense guarding the Panama Canal. During the last war, a string of bases, within a few minutes' flying distance from the Canal, including the B-29 bomber base Rio Hato, had been built by the United States on Panamanian soil. The National Assembly of Panama rejected an agreement which aimed at extending the time period for United States occupation of Rio Hato to ten years, and of the other bases (for radar stations and air navigational aids) to five years. As the United States governs the Canal Zone itself (an area of 552 square miles), as well as an outer zone of air and naval bases strung around the Caribbean from San Juan, Puerto Rico, across the West Indies, and west to the Galápagos Islands in the Pacific, the situation cannot be called crucial. It is, however, serious enough to make an early revision mandatory.

new plan appears to be a drastic admission that even she must in the future rely on land power and land-based air power rather than on sea power alone. The equatorial heart of Africa, with its string of air bases constructed during World War II, has been chosen to protect the Mediterranean, Suez Canal, and Indian Ocean artery and to control British (and American) oil interests in Iraq, Iran, and Arabia. This new defense system in depth rests upon two main pillars. One is the Nigeria base, close to West Africa's Atlantic bulge and providing a natural bridge both to the British Isles and to the United States and Canada. The other pillar, to be connected with Nigeria by a 3,000-mile strategic highway, is Kenya, close to the Indian Ocean and to the Anglo-Egyptian Sudan where Britain still controls the headwaters of the Nile. The United States seems to be closely coordinating her base net in the Middle East with the British long-range operations. A good illustration is the conversion of installations at Dhahran on the Persian Gulf into an important United States air base, while John Payne Field near Cairo, once the largest American air base in the Middle East, was handed over to the Egyptian government without a cent of compensation in December, 1946. Other strategic areas in the Middle East which form a potential part of a new net of British strategic bases are the Negeb areas of Palestine and, to the west of Egypt, the Cyrenaica, in the former Italian Libya. At the time when this paper was completed most of these regions still classified as some sort of no-man's land. Obviously Britain is vitally interested in preventing the creation of a power vacuum in these strategic areas of the Middle East which would attract the expansionist Soviet Union. The present battle over the future of the Italian colonies reflects this power game for the domination of a strategic vacuum, with the French and Soviet delegates supporting the return of the colonies to Italy under United Nations trusteeship and the British and United States representatives opposing this solution and attempting to protect Anglo-American air bases, especially in Tripolitania. Finally, attention should be called to the increasing importance of Cyprus

in the slowly developing net of new British bases which are to stem the tide of Soviet expansion in the Middle East.

It is not sufficiently known whether the United States has developed a definite strategy and policy in regard to the new defense system in the Mediterranean and Middle East regions. The limelight has been on the naval bases in the Pacific Theatre until the crisis over Germany in 1948 and the cold war since waged in Europe has brought the Mediterranean and Atlantic regions to the fore. The future historian will find it difficult to trace the hectic motions by which the security zone of the United States has, during the last years, expanded and retracted and expanded again; history showed itself at its best as geography set in motion.

PACIFIC BASES AND COLLECTIVE SECURITY

The Atlantic Charter and the Cairo Declaration committed the United States to the principle of territorial nonaggrandizement. This principle was reaffirmed in 1945 in Chapters XI-XIII of the United Nations Charter, dealing with international trusteeship. President Roosevelt's foreign policy had seemed to be directed toward a system which would include a chain of naval and air bases flying the flag, not of the United States, but of the United Nations. But the climate of international opinion was drastically changing. The Yalta Agreement which gave the Kuriles to the U.S.S.R. was so secret that it remained unknown to the Secretary of State until February, 1946; but a growing uneasiness in the United States in 1945 prompted high-ranking naval officers to make a series of statements which advocated strong naval and air bases under the flag of the United States. A statement by Admiral King in April of that year, shortly before the San Francisco Conference got under way, to the effect that the United States must keep those Pacific bases for which we paid "by sacrifice of American blood" was typical. At San Francisco, in May, 1945, a subcommittee of the Senate Naval Affairs Committee urged outright annexation.

The trusteeship principles were qualified in the Charter. The special dispensation for "strategic areas" in trust territories, which places such areas under the jurisdiction of the Security Council (with its veto provision) instead of the Trusteeship Council (Articles 82, 83 of the Charter) made it possible for a Great Power to control strategic bases short only of outright annexation.

In 1946, a serious conflict developed between the State Department and the military command over the annexation of strategic bases in the Pacific. President Truman thereupon expressed himself in favor of placing the Japanese islands under trusteeship. But his remarks, made informally at his press conference on January 15, 1946, were so general that they did not make the official United States policy clear. The press, and opinion on Capitol Hill, were divided into two camps. Senator Byrd was one of the most candid; he declared that it would be "absurd" to talk about placing the Pacific bases under trusteeship when Russia was gaining complete control over the Kuriles. The same nationalist philosophy was reflected in the report by the Special Senate Committee to Investigate the National Defense Program of August 31, 1946: "The War, Navy and State Departments should have had plans, before the end of the war, to utilize those overseas bases necessary to our national defense, and they should have used the full weight of our bargaining power in executing those plans. The appropriate government agencies must now work out and set into operation a feasible program for the acquisition or use of strategic overseas bases." Former President Herbert Hoover summarized the trend when he told naval officers on August 30, 1946, that we must hold on to the Pacific bases because "we must extend our perimeter of defense"

The "perimeter of defense" concept is equivalent to the somber admission that the decision as to what we shall do about strategic bases should be left to the military experts, though the American public was perhaps hardly aware of the implication of such a policy.

Congress appropriated funds, for the fiscal year beginning July 1, 1946, for United States bases on the former Japanese islands of Saipan, Tinian, the Ryukyus (Okinawa), Eniwetok, Kwajalein, Truk, Palau, Majuro, and the Bonins. Of these, Eniwetok (with a small land surface of 2.26 square miles distributed over forty islands and a lagoon area of 387 square miles) stands out in importance. The Atomic Energy Commission disclosed on December 1, 1947, that Eniwetok was selected to become the "proving grounds in the Pacific for routine experiments and tests of atomic weapons." The area will be closed, and the tiny island will become this country's forbidden fortress of atomic warfare. Congress also allocated funds for bases in the Philippines (where an agreement based on the principle of joint defense with the Philippine Republic was reached in 1947,⁴ on Guam, Hawaii, Wake, Midway, Christmas, and Johnston islands, in Alaska, on the Chinese coast, at Manus (which is part of the Australian mandated territory of New Guinea), and on Espiritu Santo (a British island in the New Hebrides).

The very cloudiness of the situation, and the resulting dangers, helped start us on a new tack. An official statement by Admiral John H. Towers, Commander-in-Chief of the Pacific fleet, after a White House conference between President Truman and top Navy commanders on September 30, 1946, indicated a different trend in our policy in regard to bases in the Pacific. According to Admiral Towers, a considerable reduction of the number of bases had been decided upon. The reasons mentioned were "re-examination of the general situation" and the President's directive to the Navy to curtail expenditures by \$650,000,000. The bases which will be abandoned were not specified, but the Admiral's statement indicated that Eniwetok and Majuro, which flank Kwajalein in the Marshall Islands, might be given up. Truk, once a strong Japanese naval bastion in the Carolinas, will get little more than caretaker status. The anchorages at

⁴ It is interesting to note that the President of the Philippine Republic, declaring that it was financially unable to maintain and guard the various United States wartime military bases, asked financial support by the United States for its defense organization.

Ulithi and Peleliu, in the west Pacific, and Manus in the Admiralty Islands are in a similar category.

However, we should be mistaken in assuming a definite new trend toward a reduction of naval bases in the Pacific now under the flag of the United States. While Admiral Towers' announcement indicated a more cautious policy, a more recent statement, of January 10, 1947, by a subcommittee of the House Naval Affairs Committee recommended a different course. It demanded that the United States keep complete control of all the former Japanese-held islands that we want. Without paying much attention to the United Nations, the subcommittee singled out for annexation the Marshalls, the Carolines, and the Marianas, as well as the Ryukyus. The grave decision to make Eniwetok this country's forbidden fortress in the Pacific illuminates the new course of 1947.

In an audacious and, in some quarters, severely criticized proposal to the United Nations Security Council, the United States sought the sole trusteeship over the former Japanese mandated islands in the Pacific without waiting for the peace treaty with Japan to be signed. The American proposal was in the nature of a compromise between the principles of collective and national security. It was suggested that the Marshalls, Carolines, and Marianas be placed under United Nations trusteeship, but with the United States as sole trustee. The United States would have administrative, legislative, and jurisdictional power over the islands, which would be considered as an "integral part of the United States." Moreover, areas would be classified as "strategic," under Article 82 of the Charter, at the sole discretion of the United States as administering authority. We thus claim the right to debar representatives of the Trusteeship Council from visiting areas that we may designate at any time as "closed for security reasons." These terms stop short of outright annexation. They concern an ocean area one-third the size of the United States, but a land area not larger than Rhode Island, with a population of about 53,000. Unsupported claims that a huge area in Pacific waters is strategic territory may raise questions

concerning the future strategy and policy of the United States, especially toward the U.S.S.R. and China.

On April 2, 1947, the United States Security Council approved the agreement proposed by the United States. By an ominous decision, the Soviet delegate supported the American claim. The reasons given for this attitude are worth noting: "It is the opinion of the Soviet delegation," said Mr. Gromyko in February, 1947, "that it would be right and proper to place this area of the former Japanese-mandated islands under the trusteeship of the United States. The Soviet Government considers that the United States forces played a decisive role in the victory over Japan, and that the United States made a greater sacrifice in the military operations involved in the war against Japan than any other of the Allied Powers." It takes little imagination to comprehend the scope of strategic areas which the Soviet Union, at the proper time, might claim as her special domain with the argument that her forces played in these regions a decisive role in the war and that her blood sacrifices there had been greater than those of her Allies.

While a detailed discussion of U.S.S.R. bases would be beyond the scope of this paper, attention may be called to the extensive submarine bases in the North Pacific which play an important part in the base complex developed so energetically by the Soviet Union in her northern expanse. Her net of submarine bases extends from Vladivostok northward to Nikolaevsk, to Petropavlovsk in southeast Kamshatka, and to Nikolskoe in the Kommandorskie Islands, only 180 miles west of American-held Attu.⁶

It is well for us to realize that these developments reflect a pattern of new strategic frontiers the extension of which may, in the not so distant future, affect vitally the destinies of the United States. Our own doubts may be best expressed in the words of Hanson W. Baldwin:

⁶ Cf. A. E. Talbert in New York *Herald Tribune*, May 27, 1948. Co-ordinated with bases in Manchuria (Port Arthur, Dairen) and northern Korea (Seishin, Rashin), the Soviet naval base system evolves as a powerful threat to the lifelines which link the United States and Japan. They could likewise endanger the supply lines between Alaskan ports and Seattle.

Though we frequently stated during the war that we had no territorial or expansionist ambitions, when peace came we virtually annexed the former Japanese-mandated islands. Our proposal to the United Nations was in the form of a "take-it-or-leave-it" notice; we must have a trusteeship validated by the UN or we would "withdraw" our offer—in other words, we would keep the islands anyway. Aside from the fact that it would be difficult to prove the strategic importance to us of *all* the Marshalls, Carolines, and Marianas, since our only potential enemy would seem to be Russia, far to the north, our contention that we must have a most-favored-nation position and be able to prohibit UN inspection visits to the islands certainly weakened our valid opposition to similar Russian privileges in Eastern Europe.⁷

ATLANTIC BASES

In the Atlantic, the United States had asked the Republic of Iceland to let us maintain our bases there for the duration of our military occupation in Europe. The people of Iceland did not consider that this harmonized with the policy expressed in President Roosevelt's message to Congress of July 7, 1941, in which our future policy toward Iceland was stated as follows: "[We] have given the people of Iceland the insurance that . . . immediately upon the termination of the present emergency all American forces will be at once withdrawn, leaving the people of Iceland and their government in full and sovereign control of their own territory."⁸ Even if there were some justification for the argument that the "present emergency" carried over into the postwar occupation, it was not surprising that the Icelandic people and their government were unwilling to permit us to retain the bases. For one good reason, they were aware that the Soviet Union might establish a counterbase on Spitsbergen. This possibility has left the realm of mere speculation since it was officially announced in London on January 10, 1947, that the

⁷ Hanson W Baldwin, "The Military Move In," *Harper's Magazine*, Dec., 1947, p. 482.

⁸ Cf. Hans W Weigert, "Iceland, Greenland, and the United States," *Foreign Affairs*, Oct., 1944.

Soviet Union had requested from Norway facilities to establish military bases on the Spitsbergen Islands. The fulfillment of such a request would necessitate a revision of a treaty signed by fifteen Powers in Paris on February 9, 1920, and adhered to by the Soviet Union in 1925. This treaty obligated Norway not to create or allow any naval base in the Spitsbergen archipelago. The present situation is veiled. According to a statement of the Soviet Tass agency in January, 1947, which has not been denied in Norway, the U.S.S.R. and Norway, as far back as 1945, reached a joint defense agreement on Spitsbergen. On March 2, the Norwegian Parliament decided against entering into bilateral discussions with the Soviet Union on military questions concerning Spitsbergen. The Parliament based its stand on the fact that the situation was different from what it had been during the war when the Russians needed a base in Spitsbergen for the defense of the vital convoys headed for Murmansk. However, the Norwegian Parliament carefully avoided slamming the door in the Russian face. It voted for continued discussions with the U.S.S.R. and the other signatories of the treaty of 1920 to bring about a "revised treaty that will satisfy both Russia and Norway—the only two Powers that have commercial interests in Spitsbergen. Caution was indeed imperative, for the Soviet press had repeatedly attacked Norway and her Scandinavian neighbors for allegedly mapping a Northern bloc plan to transform Northern Europe and the Arctic into a huge airdrome for Anglo-Saxon rocket planes.

Such developments explain in part the utter reluctance with which the Icelandic government met any suggestion from the United States concerning bases in its territory. A possibly serious diplomatic conflict between the two nations was avoided by the State Department's announcement on September 21, 1946, that we would withdraw our military and naval personnel from Iceland within one hundred eighty days. Under the proposed agreement with Iceland, the United States merely reserves the

⁹ Cf. *New York Times*, Mar. 4, 1947.

right to use the American-built Keflavik airfield as a transit point for planes coming from and going to Germany, until the occupation of Germany is over. Even this comparatively moderate request met with violent opposition from the Federation of Icelandic Trade Unions, which tried to force the hand of the Icelandic Parliament by a general strike.

In Copenhagen, Denmark's Foreign Minister told the House on October 30, 1946, that the government considered terminating the agreement of April 9, 1941, under which the United States had placed wartime installations in Greenland. The termination appeared to be justified, he said, because the "peace and security of the American continent was no longer endangered."

At a time of rising international tension, the United States could not accept such an understatement of facts. Secretary of State Marshall reacted to Danish requests in May, 1947, that the agreement of April 9, 1941, be terminated, by stating that the United States, while willing to enter into negotiations for a new pact, was not in a position to terminate the agreement and to evacuate all American personnel from Greenland.¹⁰ He declared, "Greenland remains of the greatest importance as a link in the defensive system of the United States and of the western hemisphere." In September, 1947, the two governments began consultations on the future status of United States bases in Greenland—which still figured prominently in the defense plans of the western hemisphere, as witnessed in the Brazilian hemispheric defense treaty. On the other hand, the United States government continued to frown at suggestions from members of Congress that Greenland should be purchased from Denmark.

The United States is reported to have asked Portugal for bases in the Azores. For reasons which are evident from Portugal's precarious geographical position in the Atlantic, we might be more successful in our dealings with her than with Iceland. The

¹⁰ At the time these lines are written, only stand-by maintenance crews are reported to be on duty at the American-constructed bases.

Portuguese government is said to have requested a political commitment in case relations with other nations were damaged as a result of concessions to us. We were granted transit rights for a period of eighteen months. However, the United States went out of the way to stress her respect for the sovereign rights of small nations by selling the American base and its equipment on Santa Maria Island to Portugal.

In the Far North, the situation is ominously obscure. Here the U.S.S.R. is our immediate neighbor over the top of the world, across the "Arctic Mediterranean." "If there is a Third World War," said General H. H. Arnold, "its strategic center will be the North Pole." The importance of the problems involved in this vast zone is high-lighted by a report from Ottawa in the *New York Times* of June 28, 1946, to the effect that Prime Minister Mackenzie King had denied in the House of Commons that a recent memorandum from Washington to Canada on Arctic defense was in any way in the nature of an "ultimatum," and that the United States had presented a plan for northern air bases. The denial was prompted by an article in a Toronto weekly which compared Canada between the Great Powers with Belgium's position as a buffer state. The international tension over these regions is also documented by assertions in the Soviet press early in 1947 to the effect that the Anglo-Americans had built a powerful base at Churchill, on Hudson Bay.

The student of geography, in appraising the role of bases in Polar regions, should keep in mind the formidable impact of weather and navigation problems; and the following statement by Rear Admiral R. H. Cruzen, task commander of the United States Naval Antarctic Expedition, seems significant:

The maintenance of far-flung Arctic bases is at present an insurmountable problem unless ships can support life-lines to those bases . . . we have illustrated defense of either of the Poles is impossible unless this country is willing to support, not one but many expeditions similar to this Antarctic survey. For, if we have learned one thing, we have learned how very little we know. We are still in

the dark on the great majority of weather problems and on polar navigation.¹¹

We may also note that, on June 28, 1946, the Moscow radio broadcast that 540 hydrographical expeditions would be undertaken in seas bordering the Soviet Union during the next five years.

THE FALLACY OF STRATEGIC FRONTIERS

Certain conclusions are possible—however, not sufficient to draw a final picture of what still appears to be a highly fluctuating situation.

A distinction may be rightly made as to the advisability of maintenance between distant national bases, and bases close to the home center of national power. A chain of bases extending from the Caribbean Sea to the Canal Zone is and will remain essential to the defense of the United States, for example, however sincerely we subscribe to collective security. Equally, the Soviet Union can rightly claim that bases in Finland are essential to her security, in the event that she wishes an agreement with the United States and the United Kingdom founded on the principles of collective security. The farther national bases are from the homeland, the greater the danger that they will become barriers to the growth of the United Nations. The newest developments in weapons of war will perhaps weaken the usefulness of distant bases, and make more apparent the dangers of over-extension. But even without inside knowledge of the new technology of warfare, from elementary facts of geography alone, it is apparent that some of the distant American bases are ineffective for a strategy based entirely on national interests. This seems to be especially true for the wide chain of bases off the coast of Asia. Dangerous errors of judgment can follow a habit of looking at Asia, in the fashion of Mercator, across the vast expanse of the Pacific. Look north! The claim that the United States needs naval bases and air bases close to the Asiatic coast in order to hold true the balance in the destinies of China and Soviet

¹¹ Cf. *New York Times*, Feb. 9, 1947, p. 41.

Asia does not rest on geographical realities. It overlooks the growing significance of the immense land frontier between China and the U.S.S.R. That area is the fulcrum for whatever leverage we, or any other Power, will exert in China. The age of colonial imperialism, in which China was opened and controlled from her ports, has come to an end. The military and political developments of recent years make it evident that the decisive force in Asia will be generated in the center, from which it will radiate toward the Pacific coast line.¹² Such trends cannot be much affected, let alone controlled, by even a perfect net of island bases overseas; such outposts are no longer blue chips of United States power. The cost of geographical ignorance is immeasurable.

Strategic bases rest on the assumption that "strategic frontiers" are still realities. The remaining Great Powers should have learned from the last war to subject that assumption to close scrutiny. Obviously, the time is far away when the United States, Britain, or the Soviet Union could entrust its national defense to United Nations bases, protected by United Nations forces. But the course taken by the United States in regard to the former Japanese-mandated islands is one of the factors which will determine whether or not the United Nations is to become a strong organization. Our most recent proposal repudiates the radical demand for annexation, although it could easily result in the kind of military occupation which is practically indistinguishable from annexation. However, the proposal to the Security Council recognizes the right of the United Nations to have a voice in the matter. Attempting to steer a middle course in foreign policy between the ideals of collective security and what seemed to be the immediate demands of national security, we doubtless desired to do no more than protect our rights and needs in the event that the United Nations should prove not to be as potent as we hoped.

A clearly defined national policy in regard to strategic bases and areas is needed, a policy not based on emotions but on geo-

¹² Cf. Owen Lattimore, "The Inland Crossroads of Asia," *Compass of the World*, pp. 374-394.

graphical realities. Such policy must be elastic, for the value of strategic bases increases and diminishes under the impact of technological developments. The floating air bases consisting of aircraft carriers and the ominous power of submarine fleets, as well as the growing range of heavy bombers are all factors affecting the validity of what only yesterday a great nation may have considered a satisfactory security frontier. Totally bewildered by the storm signs in the raging battles of the cold war, the American people have little conception of the meaning and dangers of the new American frontier. If there is enough time left for us to determine where we want its line to be drawn, we must choose, some day in the near future, between national and collective security. Our hand may be forced by the decision which the Soviet Union will choose to make. Certainly there are many gradations on the long line stretching between national and collective security; but the policy of the Western powers, like that of the Soviet Union, must move in one direction or in the other. We shall delude ourselves if we think that it can move in both.

16

LIFE LINES OF THE BRITISH EMPIRE

By C. B. FAWCETT

The British Empire was built up along the seaways of the world. Transocean navigation was developed from the fifteenth to the nineteenth century so that sea traffic became the chief means of long-distance transport. Since the middle of the nineteenth century land transport, by railway and automobile has become a rival to sea transport; and now we are entering an age in which air transport will supplement, and in some ways compete with, both. But the Empire dates wholly from the centuries during which sea transport was dominant. It is essentially an oceanic and not a continental Power. To get a clear view of the geographical distribution of its lands and peoples, we must see them in relation to the seaways.

Viewed from the sea, most of the lands of the Empire fall into two groups. First, the British Isles and British North America, which lie on opposite sides of the North Atlantic, or Midland, Ocean, have a combined area of a little more than four million square miles—nearly a third of the total area of the Empire; and they include more than sixty million people, five-sixths of its White population.

The second group is round the Indian Ocean, and extends eastward into the southwest Pacific. The British territories in

C. B. FAWCETT, born Staindrop, county Durham, England University College, Nottingham, and University of Oxford. Professor of Geography, University of London, since 1928 Author of *Frontiers*, 1918; *Provinces of England*, 1919; *A Political Geography of the British Empire*, 1933; *The Bases of a World Commonwealth*, 1941.

South and East Africa, in southern Asia, and in Australia lie on the west, north, and east shores of the Indian Ocean. These lands cover more than eight million square miles—about two-



Fig. 24. The Old World parts of the British Empire and their salt-water and overland connections.

thirds of the area of the Empire. In the three southern Dominions, they include a sixth of its White population; and in India and Africa, more than nine-tenths of its non-White peoples.

The other territories cover less than a twentieth of the total area. They are generally small, and are widely scattered. As will be seen later, most of them are along one of the routes between the North Atlantic and the Indian Ocean, round which the larger areas are grouped. So the routes between the lands of the Empire, along which its peoples make the connections which alone maintain its unity, are chiefly the ways from its North Atlantic lands to its Indian Ocean lands.

But first in importance of all the British routes is that across the North Atlantic, which links the British Isles and British North America. The United Kingdom and Canada are the two leading states of the British Commonwealth. Therefore the way connecting them is its most vital life line. It is a short transocean route, for all the ports of eastern Canada, including those on Hudson Bay, are less than three thousand miles from the western ports of Great Britain, and the shortest distance from Ireland to Newfoundland is less than two thousand miles. The way lies on an open ocean. It is short enough not to need intermediate way stations for the refueling of ships; and there are no islands in suitable positions to carry such stations, though the harbors of Iceland and Greenland are within striking distance of it to the north, as are the Azores and Bermuda to the south. It is essentially an open-sea way.

But when life lines of the Empire are mentioned the ways which are usually thought of are those from the North Atlantic, especially from Great Britain, to the Indian Ocean lands. These ordinarily receive much more attention than the primary route across the North Atlantic, because they are much more complicated in their geographical and political relations, so that the problems relating to them are more numerous and more complex. There are four seaways, and two ways which pass over continental land areas. Of these the two chief seaways are by far the most important. The six (see Fig. 24) are:

1. The open-sea way, round the Cape of Good Hope.
2. The inland-sea way, through the Mediterranean Sea, the Suez Canal, and the Red Sea.

3. The long ocean route, round Cape Horn.
4. The route via the Panama Canal.
- 5, 6. The routes which have, as a middle section, land and air ways across Canada and Africa respectively.

The open-sea way round the Cape was the first great discovery of the age of oceanic navigation. Portuguese explorations along the coast of Africa attained success when Bartholomew Diaz rounded the Cape in 1488, and Vasco da Gama reached India a few years later. Since then western Europe has been linked to the eastern Indies by this route. Until the opening of the Suez Canal in 1869 it remained the shortest and most direct seaway.

From that beginning the voyages along it have been, and are now, ocean voyages. But it is also a coasting route round the continental promontories of West and South Africa. It was discovered by cautious extensions of coasting voyages, in which the explorers felt their way, step by step, along the coast of Africa from Morocco to Mombasa. Yet, except in so far as a ship needs to call at an intermediate port, it is not necessary for the navigator to pass within sight of any land on his way from Britain to India or Australia. Nowhere is the seaway constricted. It passes through no defile.

The shortest way is, however, for much of its length a close coasting route. In time of peace and in good weather ships using the shortest route pass near the ports of western France and Spain and of Portugal. Here Lisbon has long been a principal port-of-call. In time of war, such wayside ports may be used as bases for ships and aircraft which can protect or attack ships using the seaway.

Most ships keep well away from the desert coast of the Sahara. But south of that the shortest route passes near the promontory of West Africa. Here Dakar, Bathurst, and Freetown are conveniently located for the service of the route. The last-named is perhaps the best harbor, though its climate is less favorable than that of Dakar, which is in the drier zone of the Sudan. Bathurst, on the estuary of the Gambia River, has great natural

advantages; but for political reasons it has not been developed. It is in the small British territory of Gambia, cut off from its natural hinterland of the western Sudan by a political boundary; and the French have organized the railways and road transport towards their own port of Dakar.

There are small islands which offer ports of call at convenient intervals along a route which is nearly parallel to the mainland coast of northwest Africa. This is an ocean route which avoids the difficulties and dangers of sailing too close to land; while it is very little longer than the coasting route. The chief islands along it are Madeira, the Canary Isles and the Cape Verde Islands. Many of the ships which make the long voyage from England, or western Europe, to the Cape and beyond, or to South America, use this way past West Africa.

In the South Atlantic the direct way across the broad opening of the Gulf of Guinea has been used regularly since Vasco da Gama, so that from the Cape Verde Islands or Freetown the seaway to Capetown is far from land. It passes the small islands of Ascension and St. Helena. Neither of these has any natural harbor, though there are anchorage grounds on the lee side of each island. St. Helena had some importance in sailing-ship days for supplies of fresh water, but now few ships call. Both have strategic value as possible bases for aircraft.

The strategic focus of this great seaway is about the turning point round South Africa. It is true that a well found ship can keep away from this coast at any distance up to two thousand miles. But to do so adds more than twice that distance to the voyage of a vessel bound for any port on the western or northern shore of the Indian Ocean—somewhat less to that of one bound for Australia or New Zealand.

In peacetime the practical advantages of breaking so long a voyage at a convenient port ensure that nearly all vessels on these routes call at a South African port. Capetown and Durban are the chief alternatives. The latter was greatly developed during World War II, and both are good ports.

Beyond the turning the routes spread out fanwise over the

Indian Ocean in four chief traffic lanes. To the ports of East Africa and southwest Asia the way lies through the Mozambique Channel, with a series of ports along the African coast. To Ceylon and ports on the Bay of Bengal the way is northeastward across the ocean, with Mauritius as a convenient way station. This was the route of the great ships of the East India Company, the "East Indiamen" of the centuries during which the external trade of India was controlled by that Company; and it is still used by many freighters between England and India. A third route, for ships going to and from the East Indies and East Asia, trends more to the eastward from the Cape to the Sunda Strait. There is no intermediate way station on this route. Last, and by no means least in importance, of the routes east from the Cape is that of the ships going to south and east Australia or to New Zealand. Many of these keep as far to the south as is practical without undue risk from the ice and storms of the sub-Antarctic seas. For these the extra length of the voyage round the Cape as compared with that via Suez is a very small proportion of the total mileage. Some of them return round the Horn.

Along this open-sea way there are British way stations at frequent intervals. The chief gap in the series is between England and West Africa. This stretch parallels the Atlantic coast of southwest Europe and northeast Africa for about twenty-five hundred miles. East of its middle section is Gibraltar, well placed for the defense of the route against interference from the Mediterranean. But the ports nearest to it are French, Spanish, and Portuguese—the two latter both on the mainland and on small islands.

British way stations exist to serve all the rest of the route from West Africa to India or New Zealand. There are possible alternative ports, more widely spaced, in Portuguese West and East Africa and in French Madagascar. The Union of South Africa holds all the coasts for a thousand miles each way from the Cape. Beyond that Portuguese and French colonies include all other coasts within two thousand miles. Unless some part of these

coasts is controlled by an enemy, any attack on the Cape position must be made from very remote bases.

The inland-sea way is the rival route to the great open-sea way round the Cape. It passes through Mainland from the North Atlantic to the Indian Ocean by way of the Mediterranean Sea, the Suez Canal, and the Red Sea. Its most characteristic distinguishing features are:

(1) The inland-sea way is the shorter for all ports on the northwestern, northern, and eastern shores of the Indian Ocean. The advantage in this respect over the Cape route is greatest in the northwest corner of that ocean. Thence it diminishes eastward and southward. In East Africa, Beira in latitude 20° south is the same distance from England by the two routes, while Mombasa in latitude 4° south was equidistant in terms of cost during the 1930's; that is, the cost, in transit dues and loss of time, of passing through the canal equaled that of about a thousand miles of open-sea voyaging.

(2) The inland-sea way passes through narrow seas where it is everywhere within easy reach of shore-based aircraft. In these seas it also passes through even narrower defiles at the Strait of Gibraltar, the Sicilian channel, the Suez Canal, and the Straits of Bab el Mandeb. For the whole distance of thirty-three hundred miles from Gibraltar to Aden the ships are necessarily near shore. Except in a short section east of Malta the route is nowhere more than a hundred miles from the nearest land.

On the inland-sea way Britain has conveniently placed way stations at Gibraltar, Malta, and Aden, with the island of Cyprus a little off the route. But the Mediterranean route is fully exposed to attack by land-based aircraft from any part of southern Europe; and it is possible that a Great Power in control of airfields there could close it.

This route has been called a vital artery of the British Empire, with the implication that if it were cut the Empire would cease to exist. That it is of great importance has been shown by the efforts put out to prevent the enemy from gaining control of it.

But the British Empire was built before the Suez Canal existed. For three years during World War II—June, 1940, to July, 1943—the inland-sea way was effectually closed to through traffic; and the British forces in and round the eastern Mediterranean were dependent on Suez as their port of supply. Yet the Empire survived, for it could still use the open seas. Thus, in spite of its very great importance, the inland-sea way is not, in the strict sense of the term, vital to the continued existence of the British Empire.

The British Government, before 1869, opposed the project to construct the Suez Canal. Later experience indicates that there was a sound basis for the view that in time of war it might be more of a liability than an asset to the Empire. Once it was open, however, it was clearly in the interest of the Empire to share in its control and to prevent it from falling into the hands of any enemy. So since 1869 the Canal has been of very great importance to the British.

The Pacific Ocean extends halfway round the globe. The distance from Panama to Singapore is 180° of longitude. Hence in general the shortest seaways connecting its western shore lands with the North Atlantic are those via Suez. The voyage from New York to Manila via Suez is a little shorter than that via Panama. This relative advantage of the Suez route is somewhat greater for the Atlantic ports of Canada and much greater for those of Europe. Hence the transpacific routes are of less importance to the British Empire than the two seaways already discussed. The eastern half of the Pacific is the widest gap in the series of British way stations round the world. Canada borders the northeastern shores of the Pacific, and New Zealand and Australia are in its opposite southwestern quadrant; so that these dominions are most readily in touch across it. With this exception the transpacific ways are in general much longer than the other seaways connecting the British lands, and so less useful for peacetime intercourse.

In time of war the use of open-sea ways depends on control of the seas. If that is lost all of them may be closed. So long as

the British are able to use the open-sea ways, the most useful are those across the Atlantic and round the Cape.

When the Mediterranean was closed to through traffic in 1940-1943 the ships which carried men and munitions to the British armies in Egypt passed round the Cape of Good Hope. The great length of that route led to the development of a shorter way across Africa for air-borne traffic, which proved its value then and will probably be maintained. So we should consider it here, as a supplement to the seaways.

Across Africa, from the Atlantic coast just south of the Sahara to the east coast north and south of the mountains of Ethiopia, the Sudan forms a naturally open land way. This is a zone of scrub and savanna vegetation between the desert and the jungle-forests of the Guinea coast lands and the Congo basin. In recent years it has been traversed by automobile traffic along the whole of its length. Almost anywhere on it, but particularly towards its northern edge, it is easy to find good landing grounds for airplanes and to construct airfields.

The Sudan reaches the Atlantic coast between about 10° and 16° north latitude. The chief ports here are Dakar and Bathurst, respectively French and British. Both are backed by the large colonial territory of French West Africa. During the late war that was held for the Vichy Government; and the ports were not then available to the Allies.

The forests of Upper Guinea are not uniformly dense along the coast; there is a broad gap north of the Gold Coast. Here during the war the British port of Takoradi was the chief place of entry and assembly of aircraft, and the western terminus of the airway to the Nile Valley. On this airway the central airfields are in Nigeria, and in French Equatorial Africa, which was then held by the Free French. These were supplied partly by air but chiefly by the railways of British Nigeria from the port of Lagos west of the Niger delta.

East of the delta is the port of Douala, in French Cameroun. Here the forest zone is again narrow, and the forest itself less dense. From Douala a short railway extends inland, and a road-

way is open to Ubangi and thence to the Upper Nile and Kenya along the southern edge of the Sudan. This way is some five hundred miles south of the route along the northern edge of the Sudan to Khartum. It is the shortest of the practicable land ways across Africa north of the great Congo forests.

The airway along the Sudan is roughly parallel to the Mediterranean sea-and-air way, from which it is separated by a thousand miles of desert. It served as a valuable route between west and east during the recent war, when from Takoradi eastward it was effectively under the control of the Allies. But it passes over the territory of several Powers, no one of which controls its full length (see Fig. 24). Also it intersects, and connects with, important north-south airways. Its westernmost airfields are also on the Europe to South America airway. In its middle sections it is crossed by the airways between western Europe and central and South Africa. In the east it crosses and links up with the great north-south airway of eastern Africa, and connects with those of southwest Asia. Hence it is essentially an international way.

The British and French empires are the chief states directly interested in it, together with Egypt, Belgium and Portugal. It cannot be fully developed without the cooperation of all these. The development of oil in Arabia, the clash of economic and political interests in the Middle East, and the fact that its western end is only eighteen hundred miles east of the bulge of Brazil, also make it of considerable interest to the United States.

The internationality of this land-and-air way across Africa is also characteristic of all the seaways we have mentioned. None of them is exclusively British. The ways on the high seas are open to all. The dependence of the British Commonwealth and Empire on these ways arises from the geographical discontinuity of its lands. All other Great Powers have their main resources, of men and materials, in one compact area. The British main resources are widespread—a fact that gives the Empire a wider range and greater variety of material resources and makes it a world state: a state whose resources are in every type of

natural region, and whose interests and relationships are world wide.

This international character of all its routes brings the British Commonwealth and Empire into intimate contact with all other states which use the seaways. The seafaring traditions of the British peoples also lead them to regard the sea as a highway, while by most of the continental and land-bound peoples of the world it is still thought of rather as a barrier to intercourse. During the last three centuries, however, the Midland Ocean has become the central area of western civilization and the links across it between northwestern and southwestern Europe on the east and North and South America to the west have become more important than any of the great transcontinental routes. Our modern western civilization has its home lands on the shores of the North Atlantic and has spread along the seaways.

There is now in many cases a greater unity of culture and traditions, and a greater volume of intercourse, between countries on opposite shores of the Midland Ocean than between others situated on the same continent and separated by a shorter distance. Probably both Argentina and Colombia have more in common with Spain than they have with each other. Norway has more contacts with North America than with Italy. Portugal is more closely linked with Brazil than with central Europe. Western Europe as a whole is certainly more nearly linked with the Americas than it is with Asia, though the former is across the ocean and the latter on the same Mainland continent. The concept of unity as resting first on the continents—on occupation of countries which are in a continuous land mass—is still strong; but the lands and peoples of western civilization are in fact united by the seaways.

CHAPTER V

Asia: One Half of Mankind

17

CHINA'S PROSPECTS *

By GEORGE B. CRESSEY

GEOSTRATEGY

China emerges from the Second World War as one of the Big Five of the United Nations, weakest in actual achievement but with a considerable potential in area and position. Before the end of the twentieth century she will probably have caught up with the West and regained her historic leadership in the East, provided that civil war does not retard her progress. What does geography suggest as to China's prospects?

In this era of material civilization and power politics, China is well endowed with the essentials of political geography. These include the ten elements of large size, compact shape, advantageous location, fair internal coherence, natural boundaries, access to the ocean, reasonably usable land forms, diversified if none too abundant minerals, an agriculturally productive climate, and adequate man power. Few nations are more fortunate in their geographic picture.

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GEORGE B. CRESSEY, born in Tiffin, Ohio B.S., Denison, 1919; Ph.D. in Geology, University of Chicago, 1923, and in Geography, Clark, 1931. He has traveled widely in Asia and in the Soviet Union and has served as consultant to the governments of China (1943) and the U.S.S.R. (1937). Since 1931, he has been chairman of the Department of Geology and Geography at Syracuse University.

Author: *China's Geographic Foundations*, 1934; *Asia's Lands and Peoples*, 1944; and numerous other studies on Asia.

These varied aspects of political geography have inescapable significance in domestic affairs and in international relations. Location, resources, and people are active factors in the strategy of both peace and war. They affect national policy whether planned or not. The dynamic aspects of applied geography are sometimes known as geopolitics; but they cover much more than politics, and the term is often misunderstood. It thus seems appropriate to use the word "geostrategy" to describe international political geography in action.

If China had not been huge, she might not have survived the Japanese invasion. One of a nation's greatest military assets is defense in depth. Without the ability to trade space for time, China could scarcely have held out. Even omitting the sparsely populated areas of Mongolia, Sinkiang, and Tibet, two million square miles remain. Large size is not synonymous with self-sufficiency, but within the diverse environments of China there is a wide variety of resources. Large size at the same time brings problems in communications and the welding together of diverse peoples.

China's location is not of first rank for world commerce, but she is well situated with respect to a large trade area within which as a whole are exceedingly great resources and attractive markets. Her location is both continental and maritime, it provides both security and access. Two great ocean highways meet along the China coast; one from Europe via Singapore, the other from North America. Overland communications with the Soviet Union and India are inadequate but can be improved.

While the comparative isolation of China in ancient times produced a unified over-all culture, there are today serious problems of internal coherence. Some of these are related to inaccessibility, others to environmental contrasts. Major developments in transportation will be needed to improve cultural coherence.

Many international disputes arise from unsatisfactory boundaries. China's frontier with India along the Himalaya is easily defined and defended. Next to Soviet Asia the broad Gobi Des-

ert interposes a contrasting environment; but there is no sharply defined boundary. A strong China pushes her control to the north of the desert, a strong U.S.S.R. pushes its influence to the southern margin in the form of the Mongolian People's Republic. The only part of China across which a foreign power might legitimately wish a transit route is in the far northeast, where Manchuria projects into Soviet territory and blocks the normal avenue from Lake Baikal to Vladivostok. Sinkiang presents problems which are more related to poor communications than to unsatisfactory boundaries.

China has a coast line four thousand miles in length, without measuring irregularities. In comparison, the land frontier is ninety-five hundred miles. The delta sections are deficient in good harbors, but on the whole there are adequate port possibilities and good access to much of the hinterland. The coastal Chinese have a long record of maritime interests, with native junks reaching Ceylon early in the Christian era. Nevertheless, China as a whole has been continental-minded, and one of her current problems is to reorient her economic and social outlook.

While China has a long coast line, she does not enjoy unrestricted access to the ocean. Korea and the Maritime Provinces of the Soviet Union block access to the Sea of Japan; hence the importance of the new Korean gateway at Rashin. To the east of Shanghai are the Liuchiu, or Ryukyu, Islands, a Chinese dependency taken over by the Japanese late in the nineteenth century. Formosa formerly screened the Fukien coast, while the Philippines lie to the southeast. It is but natural that as large a power as China with historic claims to Formosa and the Liuchius should be interested in their retrocession.

China is much more mountainous than the United States. The strategic advantages and disadvantages of topography were repeatedly illustrated during the war with Japan. Invasion was blocked by mountains, but internal strength is also handicapped. Towering mountains to the west and a broad desert to the north provide buffer zones. Except for the Central Mountain Belt, eastern China has no mountains higher or more rugged than

the Appalachians, nor hills more difficult of access and utilization than the Appalachian Plateaus. Large areas are too hilly to be of much significance for agriculture—as south of the Yangtze, where level land amounts to but 15 per cent.

The mineral picture is reasonably clear. With superabundant coal and limited but passable iron ore, China is moderately well equipped for limited industrialization. While she has a large variety of metallic resources, most of them appear to be of small extent. Only in tin, tungsten, and antimony is she well supplied. Southeast Asia as a whole, including the adjoining islands, is exceptionally rich in many minerals. A strong China will presumably wish assured access to the South Seas, from which she will have to draw numerous mineral and agricultural products.

Too little attention is given to the importance of climate. It is clear that agriculture is intimately related to temperature and rainfall; but human health and energy are also tied up with climatic stimulus. World maps of climatic energy give intermediate rank to China, which in turn rates above the lands to the south where Chinese immigrants have captured much of the retail business.

China has man power in superabundance. In fact, her problem is overpopulation rather than the reverse. Wherever nature offers the slightest hope of livelihood, there man has crowded the land to the limit.

Four external aspects of China's geostrategy call for mention. These are, first, access to the resources and markets of south-eastern Asia; second, colonization possibilities in the same area; third, transit corridors through northern Korea from Manchuria to the Sea of Japan, via northern Indo-China from Yünnan to the South China Sea, and across Burma for a window to the Indian Ocean; and fourth, military security through control of the interior desert lands and of the East China Sea. The political status of the Paracel Islands south of Hong Kong is not clear, but their ownership would add to China's security. These foreign problems point to a southern orientation of foreign policy, whereas domestic policy looks inward.

National leadership in any part of the world depends partly upon geographic factors. China has a large and secure home base, and a commanding position in her larger region. Japan's location is as good, but she lacks the area, the security, the resources, and the number of people.

ECONOMIC POTENTIAL

The three great geographic assets of China are coal, man power, and location. Other minerals are present in only modest amounts, and the soil is good but so inadequate in terms of population that there is little room for industrial crops or export surplus. The country almost lacks petroleum, and where water power is available it is also seasonal. Despite such shortages, China can look forward to a far greater industrial future. Certainly no other country in eastern Asia is so well endowed as a nation; but per capita possibilities are limited.

The mineral resources of China are varied, but limited in quantity. Their exploitation is a matter of metallurgy, economics, and political policy. Location and world prices are quite as important as geological origin. It is possible that China has enough of most metals to supply most of the industries that can be built for several decades. There is no likelihood, however, that she can ever equal the industrial development of the United States or western Europe. Coal without iron ore is better than iron without coal, for coal is the key to chemical industries, to cement, and to power. China's coal supply is very great and well distributed, though not all is of metallurgical quality, nor is it near ore deposits.

China's millions provide the world's largest source of labor. They are inefficient, but there is no reason why two generations of training may not make labor as skilled as in Europe. A limited diet and a somewhat enervating climate are handicaps; but the sheer bulk of China's man power is impressive. The new China has an enormous amount of work to be done in building

roads, controlling rivers, improving agriculture, developing forests, operating factories, and improving housing. The people to do the job are available.

Location is a geographic resource, for the possession of material assets is of little value in Antarctica or central Africa. Most of China's economic potential lies in areas accessible to the sea-coast, which in turn is at the meeting point on the main sea routes from Europe and from North America. In the vast area between India, Australia, and Soviet Siberia, China has no possible rival except Japan, which is dynamic but poor.

Notable changes have occurred in the character of China's foreign trade. China was once self-sufficient and traders found it difficult to offer anything in exchange for tea and silk. Later there developed a large market for cotton cloth and thread, kerosene, cigarettes, matches, sugar, rice, and manufactured goods. China in turn exported unprocessed agricultural products. Between the First and Second World Wars the country came to weave much of its own cloth and to make many of its simple factory needs. Because of the cheapness of labor these articles were exportable to the markets of southeastern Asia. Here they successfully competed with products from Japan, where efficiency was greater but where labor costs were higher.

The China market has hitherto called for consumer goods which could be sold at very low prices; and Japan was able to undersell other nations. Once China develops its own industrial capacity, the need for cheaper manufactured items will diminish. Even a modest amount of industrialization will call for a great supply of producer goods, and it is in these that the United States excels. They include mining equipment; smelters and refineries; factories for automobiles, paper, cement, and chemicals; railroad and highway equipment; and electric power plants. In addition there will be need for materials largely unobtainable in China, including gasoline, rubber, and metals such as copper in which she is deficient.

If the western world desires to sell to China, it must buy in return. China will naturally make strenuous efforts to find

markets for her goods, which must largely be the product of her agriculture, mines, and cheap labor.

China's trade has been concentrated with a few countries, but it is difficult to determine their proper rank on account of transshipment through the free port of Hong Kong. Japan has probably led in the past, but was closely followed by the United States. Great Britain was third, followed by Germany and France. A large trade, surpassing that with Britain, also exists with the areas to which Chinese have emigrated, such as Indo-China, Siam, Malaya, the Netherlands Indies, and the Philippine Islands.

The new China will have two chief areas of overseas trade interest: the United States and southeastern Asia. From the latter will come petroleum, rubber, coconut oil, sugar, hemp, lumber, aluminum, nickel, chromium, manganese, and iron; and to it China will ship cheap manufactures such as textiles, cigarettes, novelties, and other articles requiring moderate skill. The United States will supply China with plants for heavy industry, complicated machinery, some consumer goods, technological aid, and certain raw materials such as copper. In return China will export silk, hides and wool, bristles, tung oil, other agricultural materials, antimony and tungsten, and cheap-labor goods. Unfortunately these do not appear likely to equal the value of essential imports.

A modernized China will have all it can do, for decades, to meet its internal needs and balance its foreign trade. The best market for Chinese products is at home. Instead of being a threat to world commerce, China offers a great market and a supply house. The industrialization of the Orient provides one of the best prospects for the prosperity of the West. China will dominate its corner of Asia, but it lacks the basic iron and associated materials required for achieving first rank as an exporter.

RECONSTRUCTION

Starting with the early 1930's, China experienced spectacular developments in road building, city rehabilitation, and education, all of which were arrested by the Japanese invasion. Postwar

China has exceedingly urgent economic needs that touch all her life. Among them are agricultural improvements, consumer goods, export products, housing and sanitation, hydroelectric power, industry both heavy and light, land reclamation and resettlement, military defense, mining, reforestation, river conservancy, roads and railways, shipping and port facilities, and urban reconstruction.

Some plan of reconstruction is essential. When the Soviet Union started its five-year programs it ruthlessly postponed the manufacture of consumer goods and started at the bottom with mining, heavy industry, transportation, and defense. Some such emphasis is needed in China, but other needs will not wait. Nor is it possible to duplicate the Soviet program here, even with comparable political and social ideology, for China lacks the mineral wealth of the U.S.S.R. and does not possess even the initial tools.

At the close of the First World War, Dr. Sun Yat-sen proposed a huge scheme of internal development and invited the outside world to participate. He envisioned the establishment of three great new ports near Tientsin, Shanghai, and Canton, and an extensive network of railways radiating from each. With improving communications emphasis was to be placed on water power, mining, industry, agriculture, irrigation, colonization, and reforestation. His scheme overlooked the momentum of established seaports such as Shanghai, gave inadequate attention to the location and amounts of raw materials and to markets, ignored topographic barriers to communications, and greatly overestimated the settlement possibilities of the sparsely inhabited areas of outer China—all, essential geographic factors in planning.

China's basic requirement is inventory. Few major developments in industry or transport are justified until the possibilities are clear. This was illustrated in the Soviet Union by the creation of steel mills in the Kuznets coal basin prior to the discovery of Karaganda coal much closer to the Ural iron ore. China should not plan for heavy industry until all available resources are determined. Does China have unused land with soil and climate suitable for crops? Is the flow of certain rivers dependable enough to

justify large hydroelectric installations? Can the metal of various ores be extracted economically? What population trends may be counted on? What areas, if any, will be strategically safe from invasion during another war?

In reconstruction there are four major problems. The first is transportation—above all, railways. There is an immediate demand for hundreds of locomotives and thousands of cars and great amounts of equipment. All must come from abroad. Every existing line will have to be rehabilitated, and within ten years thousands of miles of new lines must be built. This is the prime material need in reconstruction. Roads and automobiles are of secondary importance. Some improvements may be made in water transport, but the bulk of China's commerce will move by rail. Transport needs hold top priority.

The second problem is heavy industry, that will enable China to make her own rails and chemicals and machines. Heavy industry depends on mining, and mining depends on geology. Here again, emphasis must be placed on as complete an inventory of natural resources as possible. The National Geological Survey has long been China's outstanding scientific bureau, but it needs to be greatly enlarged. A thousand geologists would not be too many, and in numerous cases international specialists must be brought in. Within the next decade or two we may see three or four spectacular centers of heavy industry, with at least 500-ton blast furnaces in each. China will eventually be the leading industrial area in eastern Asia, although there is little likelihood that she will reach the industrial development of western Europe or eastern North America.

Over-all planning requires the cooperation of many kinds of specialists, but the proper evaluation and interrelation of minerals, land use, communications, settlement, and markets is the task of the geographer. Every Soviet planning commission has numerous geographers. It is unfortunate that geography is so undeveloped in China.

China's third problem in reconstruction is agriculture. In some ways this is more basic, though perhaps less urgent, than either

transportation or heavy industry; for it directly affects the livelihood of three-fourths of the people. China will always remain an agricultural country, and if the standard of living and the national wealth are to be increased the condition of the farmer must be greatly improved. Better seeds and better farm management are vital. Cheap fertilizer is desirable. Very little new land can be cultivated economically. Despite widespread misinformation, both the northwest and the northeast are already fully populated in terms of agriculture. Nowhere in China is there good idle land for more than a few thousand settlers. The agricultural problem must be solved where people already live. Rural reconstruction is the key to a sound China.

Agriculture is a part of the greatest of all China's problems: overpopulation. It will do no good to increase agricultural production or improve health if the population continues to rise. Industry will absorb a few million workers, but the bulk will remain farmers. The greatness of a nation is measured by the quality of its citizens, not by their numbers.

There are many other large-scale problems in reconstruction, but the development of export products may be placed fourth. Railway equipment and steel mills cost millions of dollars, and so do electric light plants and chemical works. Some of them can be produced in China within a few years, but even the most urgent post-war imports will require hundreds of millions of dollars' worth of foreign goods. Payment for all these will have to be made sooner or later, and it will strain China's exchange credit to the limit. If the railways and factories are operated efficiently they will easily pay for themselves in time; but this may require foreign supervision while the loans are outstanding. China must be prepared to accept foreign partnership in management if she wishes foreign capital.

The export trade is thus very important. China once had large markets for silk and tea; but they were lost to competitors who produced a more standardized product. The trade in soybeans is also about finished. Tin, tungsten, and antimony are dependable exports, but their total value is small. Tung and other vegetable

oils, bristles, agricultural products such as eggs, and handicrafts remain important; but many others must be found.

Within the first decade of peace, China must catch up with a century of progress in the West. For this she needs vast amounts of capital. In 1937 the total modern industrial capital of China, excluding the Manchurian provinces, amounted to 3,807 million Chinese dollars, of which 74 per cent represented foreign investments. Japanese investments in Manchuria reached five billion yen by 1941. The total averaged under \$2 per capita, accumulated by Chinese themselves—less than \$1 in American money, in contrast to the United States figure of \$430 in 1930. Or if machinery per inhabitant is considered, prewar northwestern Europe has an index figure of 100; the United States, 405; and China, less than 1.

The industrial centers of prewar China and their products were as follows:

A. Mukden-Dairen, with coal, iron, chemicals, soybean products, cement, and railway equipment.

B. Tientsin-Chinwangtao, with coal, salt, cement, glass, and cotton textiles.

C. Tsingtao-Tsinan, with coal and cotton textiles.

D. Shanghai-Hangchow-Nanking, with cotton and silk textiles, flour mills, cigarettes, shipbuilding, and miscellaneous light industries.

E. Hankow, with iron and agricultural products for export.

F. Hong Kong and Canton, with shipbuilding, silk, and miscellaneous industries.

To these were added in wartime the small but impressive developments in Free China, notably the Chungking area with coal and iron, and the vicinity of Kunming with tin, copper, and machine shops.

All these will continue to be important. New centers of industry should arise in the Shansi coal basin and in the mineralized belt across south central China. For strategic reasons, attention may be concentrated on heavy industries in the southwest, notably in central Hunan and in Szechwan. Although the lower Yangtze

Valley does not have large resources, it has superior water transport for both river and ocean steamers and is fed by numerous rail lines. Here is the largest market, the greatest head start, and the easiest contact with imported materials and skills. Should China, like Japan, desire to import iron ore from the Philippines and Malaya, neither of which has proper coal, the Yangtze provides a good setting for steel mills. The Yangtze Valley is also the source of important agricultural exports. The center of this new industrial area may well be Hankow.

The new China must plan regionally, with balanced attention to the problems of all areas and adequate appreciation of geographic conditions. It should be clear from the preceding chapters that the possibilities of Sinkiang and the southeastern coast are unlike, but each has its needs. Only a balanced China can be a strong China.

NATIONALISM

The key to enduring peace in eastern Asia is a strong democratic China, so united that no foreign nation will again be tempted to seek special privilege. So long as any residue of alien power remains on Chinese soil, its presence will provoke further trouble. China must be so powerful in economics and in government and in spirit that she will be mistress of her own house. Japanese imperialism failed just as did that of Europe; and it is inconceivable that any other country can keep China in bondage. China has always been the dominant nation in her part of the world, and it appears probable that she will so continue.

But what kind of nation is emerging? Will China follow the socialist formula of the Soviet Union with detachment from world trade? Will she pattern after the democratic United States? Or will she relapse into civil war and chaos?

As China was unprepared for war, so she is not ready for the demands of peace. The needs for industry, transport, and public utilities greatly exceed the available capital and technological skill. So, too, the demands for political ideology exceed China's political

ability and patriotism. Education is far from adequate. Unless she decides to spend decades in lifting herself by her own bootstraps, outside assistance is essential.

It seems probable that during the second half of the twentieth century, China will make striking material progress, comparable to that of the Soviet Union after the First World War and that of the United States after the Civil War. Geographic factors all point to China's leadership in eastern Asia and to her taking a place among the major world powers. It will be regrettable if nationalism should lead her to a self-sufficient autarchy rather than cooperative internationalism. This issue will determine whether China is to be reoriented toward her seaports or will seek self-sufficiency in the interior.

These problems are of concern to a strong China; they are equally important to the United Nations. Although it is impossible to foresee distant centuries, it does not appear likely that China will become a political or economic threat to the rest of the world. The Chinese have a peaceful and democratic tradition, and, whereas they will be supreme in their own realm, their country lacks the geographic factors that might make for world dominance. Under able leadership, China will find that she has the geographic resources with which to meet her geographic needs, provided her population remains within bounds and there is peace.

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INNER ASIAN FRONTIERS *

By OWEN LATTIMORE

America's post-Columbian history was initiated by the crossing of the Atlantic. Even our period of most active continental expansion was never free of the influences and effects of sea power, sea-borne commerce, the investment of European capital, and acceleration of population growth by the immigration of Europeans.

We are less familiar with the modes of history in areas of vast expanse, with considerable populations, which are not merely "continental" but continent-bound. The influence of sea power was not absent from the earlier history of China, India, and Persia, but it was not decisive until the coming of the Europeans. In Russian history, access to the sea was of early importance; but control over sea routes was an ambition of late development. The earlier history of Eurasia was continent-bound. Major routes of migration and trade led from one land to another without cross-

* This study was first published, in somewhat longer form, in the *Journal of Economic History*, Vol. VII, No. 1 (May, 1947). Readers interested in a partial Russian bibliography of the subject should consult the accompanying footnotes in that journal.

OWEN LATTIMORE, born Washington, D.C. Graduate School, Harvard, 1929 Director, Walter Hines Page School of International Relations, Johns Hopkins University.

In China, engaged in business and newspaper work, 1920-1942, and in research and field work after 1929, political adviser to Generalissimo Chiang Kai-shek, 1940-1942.

Author *The Desert Road to Turkestan*, 1929; *High Tartary*, 1930; *Manchuria, Cradle of Conflict*, 1932; *The Mongols of Manchuria*, 1934; *Inner Asian Frontiers of China*, 1940; and numerous articles on Asiatic affairs.

ing salt water. States and dynasties rose and fell in alternating integration and disintegration, expansion or contraction of the area occupied, and cohesion or splitting up or splitting off of populations—all within land areas in which the units were of vast dimension.

Today, as the result of three and a half centuries of convergence, since about the year 1600,¹ the potentials of expansion by sea and expansion by land interact with each other more closely than ever before; and to them has been added the potential of expansion by air. In two world wars within a quarter of a century we have become familiar with the problems both of strategic logistics and of economic logistics that arise when power based on control of the sea clashes with power based on control of the land. Most recently of all, the spectacularly increasing importance of power in the air, spanning greater and greater distances over both sea and land, has captured the imaginations of all and inflamed the imaginations of some.

The mixture of the novel and the familiar in current thought has made it easy to speculate about competing powers of expansion. It is increasingly fashionable to discuss the frontier between China and the Soviet Union as a zone of impending conflict.

Some of the characteristics of the terrain encourage speculation of this kind. In the east are China's Northeastern Provinces (Manchuria), the northern part of which, adjoining Siberia, has not been fully opened up. In the center is Mongolia. In the west is Sinkiang, or Chinese Turkistan. The whole terrain is thinly populated. To the north lies the great military power and rapidly growing industrial power of the U.S.S.R. To the south lies the immense reservoir of Chinese man power. It is easy to predict that China and the Soviet Union must roll forward to meet each other in this comparatively empty terrain. It is almost equally

¹ Within twenty years before and twenty years after 1600 the following events, among others, mark the beginning of the "convergence" of world history: Defeat of the Spanish Armada; founding of the various East India companies, beginning of the Cossack conquest of Siberia and of the Manchu conquest of China, Tokugawa Shogunate in Japan, founding of Quebec in Canada and of Plymouth in New England.

easy to predict that American industrial and strategic resources will be brought up to reenforce the man-power resources of China.

Before speculating about the future, however, it is advisable to analyze the past and appraise the present so as to appreciate the true situation and the real nature of the problems inherent in it. Above all, it is well to weigh the economic history of the frontier regions and of the countries which abut on them. In the following discussion, attention will be directed primarily to the Chinese-Russian frontier; but it should be borne in mind that much that is true of the Chinese-Russian frontier can be matched, or at least approximated, on the Northwest Frontier of India (which does not quite touch the Soviet frontier), in Afghanistan, in Iran, in Iraq, and in Turkey.²

THE NATURE OF THE INNER ASIAN FRONTIER

A primary difference must first be noted between "the frontier" as it once existed in America, and "the frontier" as it has long existed and still exists in the heart of the land mass which includes both Europe and Asia. The Europeans who came to America and the Indians whom they found in America had utterly separate histories. They belonged to cultures which had had no contact whatever with each other. No such chasm ever existed between Europe and Asia, where from the dawn of history there had been mingling of peoples and interchange of cultures through migration in the great steppe zone that reaches into Mongolia and northwest China, south Siberia, south Russia, Hungary, a great part of the Middle East, and right up to the highlands of Afghanistan and the mountain gates of India.

When the Europeans landed on the Atlantic coast of America, they already had a more diversified economy, stronger forms of social and political organization, a higher technology, and more powerful weapons than the Indians. In their advance across the continent, no important territory taken from the American

² See the introductory remarks in Owen Lattimore, "The Outer Mongolian Horizon," *Foreign Affairs*, July, 1946.

Indians was ever lost to the Indians again. No communities of white settlers lived under Indian rule. The spread of colonization and all forms of development and exploitation was essentially a straight-line advance. When the Pacific was reached and the march ended, the Indians, though not exterminated, had been shouldered aside from history. Their various economic and tribal organizations had been disrupted. Politically, they became wards. Economically, they became for the most part dependents and paupers.

There was never an overland advance from Europe into Asia, or from Asia into Europe, which in this way obliterated one period or phase of history and replaced it with another.³ There was, instead, an unending ebb and flow of the human tide. The fact that one of the most important language families is the Indo-European family is one product of this process. Conquest of what we now call "Europeans" by what we now call "Asiatics" is as normal a phenomenon in history as conquest of Asiatics by Europeans.⁴ In fact, the use of the terms Asiatic and European with a "racial" connotation is a late development, which confuses more than it clarifies the problem of the classification of peoples. There are elements in the populations of Iran, Afghanistan, India, and Soviet and Chinese Central Asia which should be called European if European were correctly used as a "racial" designation. Conversely, there are groups in Europe which are European only by location, but Asiatic by derivation and physical affinity.

In the overland ebb and flow of migration, conquest, and trade between Europe and Asia, the complete displacement of one population by another is so rare that I cannot call to mind a single

³ It is indeed a traditional Russian view that under the "Tatar yoke" of the Mongol conquest, beginning in the thirteenth century, the culture of Kiev was "obliterated" and the spread of the tradition derived from Byzantium abruptly terminated. The contemporary Russian view, however, is not so extreme.

⁴ For a summary of pre-Mongol conquests on the Asiatic frontier of Russia, see George V. Vernadsky, *A History of Russia*, rev., New Haven, 1930. Even better is a book published by the same author in Germany: G. V. Vernadskii, *Opyt Istorii Evrazii* (A Sketch of the History of Eurasia), Berlin, 1934.

indisputable case. Even the great massacres ordered by such conquerors as Genghis and Timur did not achieve complete depopulation, and probably were not intended to. They appear rather to have been crude attempts to exterminate certain classes of the population.

It is also exceptional to find the subjugation of one people by another people in so complete a form that all the conquered became subjects while all the conquerors were established as rulers. The conquered people originally had a stratified order of rulers and ruled, and so did the conquerors. Therefore some of the rulers of the conquered people, by choosing just the right moment to end their resistance, were normally successful in getting themselves incorporated into the ruling class of the conquerors, where their local know-how made them useful. Conversely, the subject class of the conquerors always tended to merge into the subject class of the conquered. Whether this double merging took place rapidly—perhaps almost immediately—or was delayed for generations or even centuries depended on the conjunction of many factors, among which the economic was always important; but of the phenomenon itself there can be no doubt.

In the history of the American frontier, such processes are to be met with only in rudimentary form. The claim of pseudo-aristocratic family status because of descent from Pocahontas is exceptional. We are familiar also with the squaw-man trader or trapper who adopted Indian ways in order to improve his economic opportunities, and with the Indian scout who served with American troops in fighting "hostiles"; but the trader did not found a permanent class of traders with specialized functions, nor did the scout establish a permanent class of military auxiliaries.

In the ebb and flow between Europe and Asia, on the other hand, such processes are of major importance. There are Mongol clans of Chinese, Manchu, and Central Asian Turkish origin, and even some which assert their Korean origin. There are also Mongols who stem from such tribal constellations as the Jurchid and Khitans, which flourished before the new collective term

Mongol became established at the turn of the thirteenth century.

In China, similarly, there are clans and clan families of Mongol, Turkish, Persian, and Arab origin. The conversion of Manchu clans into Chinese clans was slower, but is now also virtually completed. Prior to the conversion of Manchus into Chinese, of course, and especially in the fifty years before the final Manchu conquest of China, while the Manchu military power was snowballing into a larger and larger organization, there was a large-scale absorption of Chinese, Mongols, and Koreans into the Manchu banners, and a further enlistment of Chinese and Mongols in hereditary auxiliary banners, which did not have full Manchu status

Similar processes are quite normal throughout the terrain of ebb and flow. It is well known that the majority of Indian Moslems are of Hindu origin. Many of the leading families of Anatolian Turkey are of non-Turkish origin. There were noble families in Russia of Tatar and Mongol and other "tribal" origin, and the process of mingling was even wider among the common peoples. The Cossacks originated in the partial adoption by Russians, Ukrainians, and Poles of the way of life and social organization of the steppe peoples; and since many of them were runaway serfs, without wives, the intermingling with the steppe peoples was physical as well as cultural. In quite recent times peasants and Cossacks, penetrating into Outer Mongolia as individuals rather than groups, were absorbed into the Mongol society and even rose to minor rank in the tribal administrative structure

In all these transformations the economic factor has been of cardinal importance. The primary distinction is between agriculture and steppe nomadism. Agriculture is an intensive economy. Steppe nomadism is an extensive economy. Rainfall agriculture is extensive as compared with the herding of livestock on the open range. Similarly, the herding of sheep on good pasture is intensive as compared with the herding of camels in the thin scrub of the desert; but all herding economy is extensive as compared with any agricultural economy. On the other hand, all herding is

intensive as compared with the economy of forest-dwelling hunting tribes. The range of economic variation can be stated in terms of population density: the scantiest population per square mile (within the geographical range which is here in question) is among forest hunters; next come the steppe nomads; a population dependent on rainfall agriculture is markedly more concentrated; and by far the densest population is that which is supported by irrigated agriculture.

Exceptionally rich data of economic history can be utilized by working along this approach.

THE INTENSIVE IRRIGATED AGRICULTURAL ECONOMY

In China, the evolution of the entire cultural complex is influenced by irrigated agriculture. There are differences between Yellow River China and Yangtze and trans-Yangtze China which are of the greatest importance in the internal history of the Chinese people; but, for the present discussion, Yellow River China is the significant area. This region, merging northward and northwestward into the steppe, lies on the variable margin of the monsoon climate. Rain "wanders" into it from the monsoon winds blowing past, but not against, the coast of North China. Hence the determining climatic factor is that the distribution of rainfall within the year is much more erratic than the total yearly precipitation. Next in importance is the fact that the variability increases, and at the same time the total yearly precipitation decreases, toward the north and northwest. Crops which depend entirely on rain may be washed out by cloudbursts, or they may wither if the rain comes too early or too late.

This characteristic of the climate gave an early and continuing impetus to the development of irrigation as a method of evening the distribution of water over the planting and growing season. The importance of the water factor is reenforced by a peculiarity of the loess soil which is widely distributed over north and northwest China. The loess contains an apparently inexhaustible store of chemicals (from decayed organic matter), which work their

way to the surface by capillary attraction when water soaks down from the surface and is then drawn back again by evaporation. Because of this natural mechanism, loess soil retains its fertility over centuries, even without the application of manure.

The soft loess soil, without stones and with a natural vertical cleavage which makes it easy to maintain ditches, can be worked with the most primitive tools. Iron implements of the present day, preserving the exact shape and often the exact size of neolithic implements found in the same localities, suggest that irrigation began in the Stone Age. Isolated patches of irrigation, in north-west China and Chinese Central Asia, fed by a tiny stream or even a spring, and worked on a scale of labor no greater than that of the individual family, probably preserve to this day the essentials of the neolithic irrigated agriculture.

Increased production and security, resulting from irrigation on a small scale, obviously encouraged irrigation on a larger scale. The irrigation of larger river basins, however, required collective labor—a step of the utmost importance in social evolution. The complex which eventually developed had the following main characteristics: dense population per square mile, providing *corvée* labor for the maintenance of ditches (for irrigation) and dikes (against flood); a maximum application of hand labor to irrigated fields, to produce the maximum of food per acre—almost per square foot; and political and military emphasis on the control of stored surplus grain in granaries. There thus grew up a strong tendency toward a “cellular” structure over wide areas; namely, walled cities, each standing in an intensively cultivated area, forming both a political and an economic unit, the countryside feeding the city, the city serving as a center of trade and artisan handicrafts and providing security for officialdom and for granaries. There followed an unending rivalry, as soon as an imperial superstructure was built up on these cellular units, between the imperial authority and the local potentates—either in their private capacity as landlords or in their official capacity as delegated tax farmers for the central imperial authority—over the control and disposition of the grain surplus of each cellular unit. Both as officials and

as landholders the ruling classes had a vested interest in a permanent surplus rural population, so that agricultural labor should compete against itself, giving the landlord the maximum advantage over the tenant.

Out of the complex as a whole there arose the "Asiatic paradox," which is found not only in China but in every region of irrigated agriculture in Asia. The paradox consists in the fact that in Asia the place to look for perennial malnutrition, frequently reaching the degree of chronic semistarvation, is in the districts which produce most food per acre. The explanation lies in the following conditions: The surplus population makes labor so cheap that the landlord prefers human labor to mechanization, because mechanization requires investment of working capital, while human labor, if sufficiently defenseless, provides a yearly grain tribute without capital investment except in the purchase of land. On the other hand, intensive application of human labor to the growing of food means so many mouths to be fed that if the working farmer were to eat his fill, there would be little or no surplus. The landlord therefore makes tenant compete against tenant, to see which will offer him the highest rent in grain. The successful tenant eventually finds that he cannot both grow enough food and eat enough food. If he is to satisfy the landlord with enough surplus food, he must resign himself to going without enough food to satisfy himself and his family.

Inseparable from the Asiatic paradox, in economic history, is the failure of Asia to develop out of its own growth and evolution the kind of capitalism which evolved in Western Europe—and in the United States, in whose early history lack of population stimulated the invention of machines. In Asia, wherever the Asiatic paradox operated—and it operated over a wide enough area to dominate even areas in which cultivation was less intensive—the major vested interest was committed to a tribute return on purchase capital invested in land. The vested interest was therefore suspicious of working capital invested in productive processes looking to a return in money, or interest. There is room here for only one example:

In China, the usefulness of coal as fuel was known long before it was known in Europe. If, however, coal mining had developed on a scale which drew surplus labor away from intensive agriculture in quantities that affected the labor market, the landlords and the landlord mandarinates would have been shaken at their economic base. It is therefore not surprising that mining and comparable enterprises were always taxed to death when they began to attain a scale that might have led to true capitalism.

ORIGINS OF STEPPE HISTORY

The Yellow River derives its water from the snows of Tibet, and though in part of its course it flows near the Mongolian steppe it receives no important tributaries from the steppe. The Mongolian steppe and the deserts of Central Asia are in the main areas of inland drainage, in which watercourses wither and eventually die. These geographical conditions, in conjunction with the increasing variability and decreasing total quantity of rainfall as one moves inland to the north and northwest from the coast of north China, determine in economic history the differentiation between the agricultural economy and the steppe herding economy.

Our understanding of steppe history is handicapped by strongly developed conventions of historical writing in both Europe and Asia. It is now well established that there is no such thing as a straight-line evolution from the hunting economy ("most primitive") through pastoral nomadism (still "primitive") to agriculture (the beginning of "civilization"). Pastoral nomadism was in fact a late development. Yet, though most of us pay lip service to the true historical sequence, many of us continue to write under the influence of the old convention.

The old convention is based on the fact that agricultural and city-dwelling peoples developed writing much earlier than steppe peoples, and built up a much greater volume of written history. They were raided, harassed, and conquered by steppe peoples much more often than they were able to extend a police control

over the steppe. Yet, because of the difference of volume in written materials, our source material for the history of the steppe derives much more from peoples who were conquered from the steppe than it does from the steppe itself.

To the peoples who were subjected to the power of the steppe, the peoples of the steppe were "barbarian," *ergo* "primitive." Those who were roughly treated by them found a degree of recompense in ascribing the victories of the steppe warriors to brute force and overwhelming numbers, and in denying that they were guided by rational or civilized principles, or practiced rational methods. A good example is the solidly established European tradition that the Mongols were like a horde of armed locusts, overwhelming all resistance by the sheer weight of their numbers.

Yet the fact is that the Mongols regularly campaigned with small numbers against superior numbers, and that, far from winning their victories by blind savagery, they triumphed because they had perfected a technique not commanded by any of their opponents—the technique of the mounted archer, who represented, in his day, the optimum combination of mobility and fire-power. The effective use of this technique required great skill and therefore an unshakable discipline. Because, as anyone knows who has tried it, it is possible to shoot more accurately and rapidly over the tail of your horse than over its head, the technique required contact with the enemy, followed by simulated retreat, in which the "Parthian shot" was employed. Then, when the enemy were drawn out of formation in the haste of the pursuit, they were rolled up by a flank attack which had been held in reserve. The flank attack, not having to face a close or organized fire of arrows or hedge of lances from the loose lines against which it charged, could use the horseman as mounted swordsman instead of mounted archer, relying on the shock weight of horses and men together.

Steppe peoples, in every case which has been checked either by written sources or by archaeological data, appear to have originated not in the heart of the steppe but at the margin of the steppe.

There existed, of course, a neolithic population in parts of the steppe; but its economy was a typical "mixed" primitive economy, not a pastoral, nomadic economy. A typical steppe people, living by the herding of livestock, is an offshoot from some people at the edge of the steppe which originally had some other economy. Consequently, the steppe society is a late development, not a primary social form. Frequently—so frequently, in fact, that it is perhaps the usual and normal form of development—a steppe people derives from more than one social and economic source.

In the case of Mongolia, for instance, we can unmistakably discern three sources of origin of the successive Hsiungnu, Turk, and Mongol tribal agglomerations.

(1) In the forests of Urianghai (Tannu-Tuva) and the Baikal region there lived peoples who, like all the truly primitive non-arctic peoples of whom we have any knowledge, had a mixed economy. They hunted, fished, and also gathered roots, berries, and fruits. The gathering of the seeds of wild "grass-millet" was certainly very early, and led to an early cultivation of millet. Some of these peoples, of whom the reindeer-using groups among the Urianghai and the reindeer Tungus are living survivals, eventually domesticated the reindeer, one of the most easily domesticated of all animals.⁵ They did not have enough reindeer to live entirely off their herds. Reindeer nomadism on this large scale is practical only on the open tundra. In the forest, if a herd is large, individual deer are too easily lost.

Groups of these people could easily make short trips from the edge of the forest into the open steppe of north and northwest Mongolia. At first they could not stay long in the open steppe, for hunting or any other purpose, because the steppe pasture is not good for reindeer. In time, however, they made a transition from domestication of the deer to domestication of horses, sheep, cattle, yaks, and (probably last) camels. It is still an open ques-

⁵ O. Männen-Helfen, *Reise ins asiatische Tuwa*, Berlin, 1931, pp. 37-47, points out that the forest hunters of Urianghai are the only reindeer users who both regularly trap wild deer to cross with the deer in their herds, and do not castrate their deer. Both points are important in suggesting the relative ease, for a very primitive people, of domesticating the reindeer.

tion whether they independently domesticated all these animals, or first learned from other peoples that they could be domesticated, and then made the transfer from the reindeer which they had themselves domesticated.

(2) In the oases of Russian and Chinese Central Asia there also lived primitive peoples who gathered wild food, fished in the marshes, and made hunting expeditions into the mountains and steppes. Agriculture developed early in these oases, followed by an extremely early development of irrigated agriculture. The water in the oases came from snow-fed rivers in the mountains; hence high water was governed by warmth, and was regular and predictable. It was easy, the soil being soft, to begin by assisting Nature, by impounding flood water, and to proceed to the use of irrigation ditches.

According to the archaeological evidence, the domestication of animals in these oases was later than the practice of agriculture.⁶ The oasis peoples of course did not have the reindeer, but in order of time it is probable that they were the first to domesticate the horse and the sheep. The farmer who lived on the outer edge of the oasis had the poorest farming, but the easiest access to the half-desert steppe for hunting. It is probable that such marginal farmer-hunters captured the young of the wild horse and wild sheep, for use both as decoys and in magic to increase the number of the game. An essential point is that this kind of hunter, rather than the wandering hunter, could build a pen in which to keep the captured wild animal until it was tame enough to handle—a critical problem in the domestication of horses and cattle and even sheep, though not in the domestication of reindeer, which can be tamed in the forest or the tundra without pens.

It is probable, again, that it was the marginal farmer who became the nomad. The farm at the edge of the oasis was less profitable than that in the heart of the oasis; and as skill in the handling of animals increased, and the profit of the use and sale of their products grew, it became easy to abandon the farm,

⁶ See, e.g., R. Pumpelly, ed., *Explorations in Turkestan: Expedition of 1904*, vol. I, "Prehistoric Civilizations of Anau," Washington, 1908.

launch off from the edge of the steppe, and take to the open steppe, living by the control of animals native to the steppe, which had been difficult to hunt when wild but had become easy to manage, once domesticated.

(3) The oasis-and-steppe and oasis-and-desert terrain of Central Asia merges into a terrain of oases and semioases in north-west China (Kansu and Ninghsia), and from here a further transition leads to the *locus classicus* of what may be called the loess economy in Shensi and Shansi. Here again, before the earliest agriculture and irrigated agriculture, the most primitive people hunted, fished, and gathered food. They undoubtedly tended to wander, in search of the various kinds of foods which they used; but they were not nomads in the sense of controlling herds of animals.⁷

Clearly, the first effect of agriculture was to make relatively land-fast those groups which practiced it, especially when they developed a vested interest in irrigation ditches, even small ditches, which represented labor once done that would continue to produce in succeeding years. We must therefore envisage a process of differentiation between those who first took up agriculture and those who held to the old way of life, and especially a differentiation in favor of those who first appropriated the bottom lands which were the easiest to irrigate.

This theoretical phase, for which we have only indications, merges into a semihistorical and finally a definitely historical period in which we have unmistakable evidence that the most highly differentiated groups began to spread out and encroach on the domain of the undifferentiated or least differentiated

⁷ In the terminology of the social sciences, there is frequently confusion in the description of *migratory* societies and *nomadic* societies. The term "nomadic" is here used of societies which are mobile because they control, and at the same time depend on, the movement of flocks and herds of domesticated animals. Compare the Greek words νέμω (to deal out, to disperse, to tend flocks)" and νόμος (a pasture, an allotted or assigned abode; a usage, custom, law, ordinance). A curiosity of cultural history is the wandering of the Greek root of these words, along the currents of the religious dispersals of the early Middle Ages, to the nomads of Mongolia, among whom it is used to this day in the form *nom* (law, doctrine; religious text).

groups. They did so because, once they had mastered the technique of irrigation, and once they had appropriated the land easiest to irrigate, it still was profitable to push irrigation into terrain where the engineering was more difficult and the returns lower.

In the course of this wider spread, there was acute social conflict. It is to be inferred that the chieftains of the "lagging" groups were key figures in the conflict. In some cases it paid the individual chief to come to terms with the ruler of one of the new "civilized" groups, joining the aristocracy of that group and adding his subjects to the subject population. In other cases the chief, afraid of being himself subordinated, led his followers farther and farther back into terrain that was more and more marginal for agriculture, though still providing food resources in game, berries, roots, and catch crops of an agriculture much cruder than that of the groups which now had a long head start in being "advanced," or "civilized."

In view of the natural conditions already discussed, those groups which withdrew or were driven back toward the escarpment of the Mongolian steppe-plateau found that they could rely less and less on such agriculture as they had, and found at the same time that the spread of population had reduced the game resources.

By this time, of course, as we know from historical record, domestication had long been practiced by the settled people in China. For the development of steppe nomads on the edge of north China, accordingly, the critical factor is not the development of the technique of domestication, but the point of economic pressure on the steppe margin at which the use of a few square miles of steppe for grazing became convincingly more profitable than the use of a few drought-harried acres for agriculture. Once this point was reached, people began to abandon their farms in significantly large numbers, and to take off into the steppe as full nomads. It is probable, though allowance must be made for the fact that the Chinese written records are fuller than the Central Asian archaeological data, and therefore give

the impression that there was more activity in the Chinese field of history, that the Chinese contribution to the steppe population was the latest in time, but the largest in numbers.

At any rate, the Chinese records are unmistakable on one point: once the northward spread of agriculture had reached the decisive point of diminishing economic returns on cultivated land—which corresponded geographically with the difference between the land of running water and the steppe land of few and poor streams—the “steppe problem” rose up and confronted the Chinese with dramatic suddenness. Those who had entered the steppe, whether they had entered it from China or crossed it from the northern forests or the western oases in Central Asia, found that their combination of mobile economy and mobile military man power made it easy and profitable for them to raid into China, while it was awkward and expensive for the Chinese to send punitive expeditions into the wide steppe.

It is at this point that Great Wall history begins. The Great Wall was first built in sections, by independent Chinese kingdom-states, beginning at the end of the fourth century B.C. A century later, these walls were consolidated into “the” Great Wall. This achievement, which demanded forced labor in colossal numbers, accompanied and climaxed the founding of the Ch’in Empire, the first true empire in China; and it should not be forgotten that it was accompanied also by the rise of the Hsiungnu Empire, the first of the great steppe empires.

CHARACTERISTICS OF THE STEPPE ECONOMY

There are no examples of steppe society which are diagrammatically “pure” examples of the steppe society as a type;⁸ whereas numbers of relatively pure examples of the intensive agricultural society are known. The diverse non-steppe origins of the steppe peoples, and the diversity of subregions within the

⁸ “Qu’il ait existé des nomades se suffisant, exclusivement, avec la chair, le lait et le poil de leurs troupeaux, c’est possible; mais on n’en a jamais vu de semblables dans les temps historiques”—L. Cahun, *Introduction à l’histoire de l’Asie. Turcs et Mongols, des origines à 1405*, Paris, 1896, pp. 49-50.

steppe, account for the fact that all that we find in history is a series of approximations toward a "pure" steppe type. Nevertheless, a group of inherent characteristics of the steppe society can be distinguished.

(1) The steppe society is mobile—mobile in the herds which are the most important form of property, and mobile in the tent-habitations of the peoples. There is always a strong tendency to regulate mobility, as between different tribes each claiming its traditional pastures and its traditional line of migration between seasonal pastures; but the capacity to move is always inherent, even when not exercised.

(2) There has never yet been a definitive analysis of the "tribal" or "feudal" structure of the steppe society. The Russian experts have much more material at their disposal than any other body of scholars; but modern Russian writers, followed to a certain extent by modern Chinese writers, have decidedly over-emphasized such "feudal" characteristics as the right of chiefs to exact personal services and economic tribute. In so doing they have tended to overlook an important aspect of the factor of mobility.⁹

In all feudalism, there is a theoretical reciprocity between the services and tribute claimed by the lord, and the protection extended by the lord. In feudalisms based on agriculture, towns, and fortified strongholds, the lord tended to become so strong that the privileges which he claimed were out of proportion to the protection which he conferred. In the mobile steppe society, on

⁹ An important advance is marked by a recent Russian article: S. Yushov, "K voprosu o dofeodal'nom ('varvarskom') gosudarstve" (On the Question of the Prefeudal ["Barbarian"] State), in *Voprosy Istorii* (Questions of History), No. 7, 1946, Moscow. This article is a penetrating comparative study of the rise of feudalism out of three different kinds of prefeudal society, that of the Kievan state of the ninth and tenth centuries, that of the pre-Genghis Mongols, before the thirteenth century, and that of the Anglo-Saxon kingdoms of the sixth-ninth centuries. A weakness of the discussion of Mongol society in this article, however, is that it does not sufficiently emphasize the cyclical, rise-and-fall relationship between the successive "nomadic feudalisms" in the Mongolian steppe and successive agrarian-based dynasties in China, and the underemphasis reappears in Yushkov's otherwise brilliant comparative study as an underlying inadequacy of documentation.

the other hand, the feudal subject, especially the man fit to bear arms, if he considered himself ill-treated by his lord, could more easily escape, and moreover take with him valuable mobile property, and thus have something with which to bargain when commending himself to another lord. Throughout steppe history we find examples of the kind of fluidity, and therefore, especially in time of widespread intertribal war, we find that the steppe lord had to respect the assent of his people more than the feudal lord in other societies.

(3) In warfare between steppe nomads and settled peoples, the strategic optimum for the settled people was the preparation of a mobile force, and a deep and sudden invasion of the steppe, in order to catch the nomads off balance—in other words, a quick, short war. It was exceptionally difficult to attain such an optimum. On the other hand, a long war favored the nomads: they could withdraw their mobile property and women and children out of range, and by raids into the settled country bring back plunder, so that in the course of a long war they tended actually to enrich themselves. The long war, on the other hand, invariably weakened the settled people: their farming and trading were interrupted, and their irrigation works got out of repair. If the war went on long enough, groups of the most impoverished settled people would throw themselves under the protection of steppe lords, because their own lords could no longer protect them. The longer the war, therefore, the greater the likelihood that the steppe lords would actually build up their power by the accretion of border territories, with tributary non-nomad populations.

(4) Because the optimum of mobilizing a force in the settled country and sending it on a swift, deep invasion of the steppe so seldom succeeded, the lords or overlords of the settled land frequently tried to turn the steppe against itself by offering subsidies and court honors to the nearer nomad chiefs on condition that they form a military screen against the more distant nomad chiefs. The defect of this device was that an able "auxiliary" chief could and sometimes did take advantage of his strategic position, en-

croach on the empire or kingdom which he served, and even usurp the dynastic power.

(5) Out of the interaction of all these factors, there developed within the steppe society a chronic conflict between the mobility inherent in the steppe people as a whole, and the territorial fixation, or identification of a particular tribe with a particular territory, which intermittently favored either the interests of a steppe lord with claims to overlordship in a settled territory, or the interests of the overlord of a settled state employing the lords of steppe tribes as auxiliaries. Examples of this kind of mutation in the tribal society and the interests of the tribal chief can be drawn from the history of the frontier of the Roman Empire as well as the histories of Asiatic empires.

An especially apt example, because it dates from the late sixteenth century, in the period when the histories of Europe, Asia, and America began to converge on one another, is the development of the Lama Church in Mongolia. Though lamaism is usually discussed as a demilitarizing influence among the bellicose nomads, the fact is that the establishment of the institutions of the Lama Church, with fixed temples and permanent monastic territories, was accompanied by especially bloody wars, because it meant nothing less than the paralyzing of the ancient nomad mobility by the successful creation of a parallel system of fixed and therefore vulnerable territories. With dramatic rapidity, the ecclesiastical potentates degenerated into instruments of power and exploitation in the hands of the Manchu emperors, once the Manchus, in the seventeenth century, had installed themselves as dynastic rulers of the settled Chinese and overlords of the steppe Mongols.

OTHER ZONES OF STEPPE AND AGRICULTURE

China's relationship to the steppe and the steppe peoples can be compared, with necessary modifications, with the experience of other countries in Asia. The problem of extensive and intensive economy is common throughout. Since the emphasis here has

been on China as the example of the agricultural environment and Mongolia as the example of the steppe environment, it is important to note that, though the Chinese documentation is the most complete in some of the important kinds of data, the kinds of phenomena dealt with are decidedly older in the Near and Middle East than in China and Mongolia.

In India the picture is not so stylized as it is in China. In northwest India, which is not bordered by a steppe plateau but encircled by mountains, the irrigated and unirrigated lands are not set off from each other in large blocks, but interpenetrate each other in a rather complicated way. Moreover the adjacent pastoral economy, as in Afghanistan, is more often a semipastoral economy, associated with fixed villages and village institutions, than true nomadism of the open steppe. In Iran and Iraq the contrast between the steppe and the sown is more stylized, as in China; but the irrigated agriculture is partly of an oasis type and partly strung out along rivers which have steppe or desert on both sides, and consequently lacks the scale and mass that are so impressive in China. In Turkey the agriculture is more massive, but there is more of the semipastoral economy that is linked with villages, and less open steppe.

THE RUSSIAN STEPPE

It is when we come to south Russia that we find a picture as stylized as that of China, but with important differences.

Both in the forested land and in the steppe land of Russia there once prevailed a characteristic neolithic culture of hunting, fishing, and food gathering. When agriculture evolved, however, it was quite unlike the Asiatic intensive agriculture. It was associated with a great diversity of techniques: the clearing of forests, and the continuing use of forest resources in conjunction with the practice of agriculture; great use of the exceptionally advantageous network of streams for travel and trade; and a combination of rainfall agriculture and the herding economy in the south Russian steppe.

The fertility of the steppe adjacent to the Black Sea, under a rainfall agriculture, was of the greatest importance. Not only did intensive irrigated agriculture not develop on any important scale, but grain production relying on rainfall alone was so large that grain became an export commodity at an early period—to Greece, for instance.

There was, accordingly, not the same physical cleavage between steppe nomadism and agriculture that there was between the intensive agriculture of China and the extensive steppe economy of Mongolia.¹⁰ In south Russia, the center of gravity of the chieftains and rulers was unstable, being influenced partly by their own interests and partly by conditions in territory not under their control. At times it paid the ambitious chief to rely primarily on a following of pastoral tribesmen, without agriculture, using their mobility and military potential to attack trade routes and trading cities, and to raid farming populations. At other times, especially when economic conditions favored a heavy export of grain across the Black Sea, combined with trade in valuable commodities like furs, coming down the rivers from the forest lands, it paid the ruler to associate himself with a fortified urban center of power, and to hold in check the raiding of the pastoral nomads under his authority.

An essential instability underlay the whole structure, however, and the source of instability was among the nomads. When a chief of nomad origin associated himself with urban and agricultural interests, he began to lose touch, or in the next generation his heir began to lose touch, with the tribal politics of the nomads; and gradually a way would open up for a new warrior chieftain among the nomads either to impoverish the urban and agricultural interests by increasing demands for subsidies and gifts, or to resort to open warfare. Another and more unpredictable source

¹⁰ As a partial but important exception, it should be noted that there appears to have been an early but strong tendency, reminiscent of the Great Wall of China, to fortify with long walls the Kerch peninsula in the Crimea and the Taman peninsula opposite it, across the "Cimmerian Bosphorus" or Straits of Kerch. The small-scale "Great Walls" gave rise to the old name *Crim Tartary* and the modern name *Crimea* (from the Mongol word *kerem*, "a wall")

of uncertainty lay in the variations of the demand of the Black Sea trade for grain, furs, and other commodities. If trade was bad, revenues decreased and the nomads became restless.

Wide fluctuations are consequently characteristic of the history of south Russia. Great tracts of the steppe were in some periods brought under cultivation, and at other periods went back to pasture; which meant that whole tribes and peoples alternated between an agricultural or predominantly agricultural way of life, and a pastoral or predominantly pastoral economy.

Among both Slavs and non-Slavs of this region the unending ebb and flow left its tidemarks. Whole tribal groups were absorbed among the Slavs and lost their non-Slav languages; in other cases, the main tribal group adopted a way of life parallel to that of the Slavs, but retained its original language. In such cases, a kind of head-man lower stratum of the chieftain class tended to remain in local authority, while the higher chiefs climbed on up into the Slav aristocracy.

Conversely, there were Slavs who went over into the steppe life, both in groups and as individuals. Under the heavy impact of a major conquest, such as that of the Mongols, the main mass of the population was held down to its old way of life, to serve as a source of tribute, but the aristocracy was partly integrated into the Mongol system of tribute-gathering chiefs. Only as the Mongol hold weakened, and opportunity arose, did there arise out of this aristocracy, subservient to the conquest, a movement to lead the subject people to throw off the yoke.

THE COSSACK EXPANSION

A different kind of phenomenon appeared when the Slav states became strong enough to be independent, but were not yet strong enough to organize the conquest of the steppe. Fugitive serfs from Poland, the Ukraine, and Russia founded the Cossack communities, which spread into that part of the steppe which had a good rainfall. Here they retained agriculture but took over in large part the livestock economy of the steppe and imitated

to an appreciable extent the social and military organization of the steppe people. Such a movement represented a Slav encroachment on the steppe; but it was antagonistic to the great Slav feudal nobles, and therefore could not be used in the service of the Russian state until the central power of the Tsars had brought the nobles under control.

Cossack expansion took two forms.

In the forests, at the end of the sixteenth century, the Cossacks began to exploit with a new vigor the collection of the fur tribute, which had been known from ancient times. With fantastic speed, they swept from the Urals to the Pacific. While this movement has been described as part of the Russian "urge to the sea,"¹¹ it should be noted that when the Pacific was reached the Russians, instead of beginning to exploit sea power in the manner of the British, Dutch, and French, thrust on into Alaska in search of more fur. The significance of sables and other furs was that they represented high value for small weight and bulk, could be carried back by land transport to Moscow, and gave the Tsar, as the autocrat of the state, a direct accession of wealth in negotiable form.

The technological factor in this expansion must not be overlooked. Firearms became more plentiful (the first gun factory was founded at Tula by Boris Godunov in 1595), and the firearms of the Cossacks gave them an advantage over all the tribes they encountered. Even more significant, however, was the versatility of the Cossacks. They used both horses and boats with equal facility, and when they met with peoples who used the reindeer and the dog sled it took them no time at all to acquire these new techniques.*

¹¹ Robert J. Kerner, *The Urge to the Sea: The Course of Russian History*, Berkeley, Calif., 1942; also "The Soviet Union As a Sea Power," *ante*, pp. 104-122

* Compare this, for instance, with British polar explorers who continued to man-haul their sledges for more than two hundred years after they first saw Eskimos using dogs. The Hudson's Bay Company was founded in 1670, and Scott and Shackleton used man-hauling in the first and second decades of the twentieth century.—THE EDITORS.

The second form of Cossack expansion, in the open steppe, also became important in the sixteenth century. Its backlash against the Slav world at first concerned Poland more than Russia, and at times the Cossacks almost attained the status of a nation, bordering with Poland, Russia, Turkey, the declining khanates of the Tatars in the Crimea and the Kalmuck Mongols on the lower Volga, and even Persia. The total effect of the Cossack growth was to prepare the way for the Russian expansion into the Caucasus and Central Asia; but the definite conquest of Central Asia awaited, first, the stabilization of Russia's relationships with Europe, and second, the growth of methods of investment and commerce with a wider outreach than was possible in the age of the caravan and the bazaar. Then, in the nineteenth century, Russia rapidly took over direct rule in Central Asia and consolidated its economic and strategic hold with railways.

ABSORPTION AND INCORPORATION

Comparison between the Russian fringe of the steppe and the Chinese fringe reveals the operation of two different modes of history. Each mode has its own peculiarities of economic form and social structure, which in turn are influenced by the factors of geography and environment.

On the Chinese fringe there was a harsh cleavage between terrain which responded best to the intensive economy of irrigated agriculture and terrain which responded best to the extensive economy of pastoral nomadism. The two economic forms and the social structures based on them were so incompatible that they never merged with each other. Political relations alternated between Chinese efforts (of which the Great Wall is the most massive monument) to exclude the steppe, and efforts of the steppe nomads to subjugate agricultural China and lay it under tribute.

Mixed societies did exist. The Tanggot state (Hsia) which flourished in the twelfth century had its nuclear territory in what

is now the province of Ninghsia, at the western end of Inner Mongolia. At the eastern end of Inner Mongolia there arose the Khitan (Liao)¹² in the tenth and eleventh centuries, the Jurchid (Chin or Kin) in the twelfth century, and the Manchus (beginning in the sixteenth century). Each of these peoples was based on a mixed economy which included both farming and herding. Each of them found, however, as it grew that it could not maintain a balance between the intensive and the extensive components of its economy. It had to become either more pastoral and nomadic, or more agricultural and more committed to the revenue from irrigated agriculture.¹³

Mixed societies on this frontier served as a mechanism which, when it operated in one direction, absorbed nomads into the Chinese culture, and when it operated in the other direction, absorbed Chinese into the steppe culture.

Of the two kinds of absorption, our literature has made us familiar with the absorption of barbarians into the Chinese culture. "China is a sea which salts all streams that flow into it." There was even, at one time, a rather widespread complacent readiness to acquiesce in a Japanese conquest of China, on the ground, "In a hundred years the Japanese will be absorbed by the Chinese anyway."

There is no general recognition of the other form of absorption, though in a history of many centuries it has been a factor of an importance comparable to that of the absorption of barbarian nomads by the Chinese. It is true, of course, that the numbers of Chinese absorbed by the extensive economy and thinly spread population of the steppe were never anything like as great as the numbers of nomads absorbed in China. This, however, does not diminish the importance of the phenomenon, because the phenomenon itself demonstrates the fact that the

¹² See the forthcoming volume *Liao*, by Karl A. Wittfogel and Fêng Chia-sheng, in the projected series *History of Chinese Society*, under the general editorship of Karl A. Wittfogel. The General Introduction to the *Liao* volume, by Wittfogel, has already been published in *Transactions of the American Philosophical Society*, Vol. XXXVI.

¹³ For general references see Owen Lattimore, *Inner Asian Frontiers of China*, New York, 1940.

Chinese culture was incapable of spreading over the steppe and incorporating the steppe into China.

Although comparatively unfamiliar to us, the conversion of Chinese into nomads can be fully documented. The evidence has to be dug for, whereas the evidence of the other kind of absorption is readily available in great quantity. There is an early example of the fluidity of the frontier population—significantly, from the very period in which the Great Wall frontier was being consolidated—in the concern of officials in charge of military colonization along this frontier over the instability of allegiance of the people.¹⁴

On the Russian fringe of the steppe the more gradual transition from arid steppe encouraging pastoralism alone to rainfall steppe encouraging a livestock economy in conjunction with rainfall agriculture, and the absence of large expanses of territory encouraging irrigated agriculture, facilitated a transitional spread from "pure" nomadism to the Cossack type of society in which people lived in houses but were nevertheless ready to migrate from one place to another. As a Russian writer has pointed out, the Russian extensive rainfall agriculture, capable of being combined both with the grazing of livestock and with the exploitation of the forest, "rapidly, though superficially, conquered enormous territories," whereas in the form of spread of Chinese agriculture "the constant increase in population necessitated a certain surplus . . . drop by drop, to flow over the edge." The Russian "could carry on his general farming wherever he pleased," while for the Chinese it was "an economic absurdity" to farm intensively except within the cellular pattern of cities at a short dis-

¹⁴ In B.C. 33 the Khan of the southern tribes of the Hsiungnu offered to make himself responsible for the western sector of the Great Wall. A counselor of the Chinese emperor warned that many of the people along the border, under Chinese rule, were of Hsiungnu origin and might return to their old allegiance; the descendants of those who had accompanied the Chinese troops in occupying the frontier were poor and might go over to the nomads; the slaves of the border population were discontented and, having heard of the happier life of the nomads, might run away to join them; escaping criminals would also have a refuge. Quoted from the *Ch'ien Han Shu* (History of the Earlier Han), chap. 94, second section, in Lattimore, *op. cit.*, p. 471 n.

tance from one another, each with its surrounding unit of closely cultivated land.¹⁵

On the Russian fringe of the steppe, consequently, instead of absorption, there is a different phenomenon to be considered, that of incorporation. Like absorption, it worked in two directions. In certain circumstances, peoples of the steppe were able to incorporate into that domain considerable tracts of marginal territory, and considerable groups of non-steppe society. In other circumstances, the Slavs, emerging from their ancient forest territory, were able to incorporate the steppe and large steppe societies into the Slav domain.

THE FRONTIER OF JOINT UTILIZATION OF RESOURCES

Absorption in its old form, and incorporation in its old form, both were considerably modified in the nineteenth century by the spread of a new form of expansion, energized by capitalism. Still further transformations are taking place as the result of the increasing momentum of development of the socialist economy and collectivist society in Russia.

Capitalism grew up within and transformed Europe and North America; it was imposed on such countries as India and China. In Russia, capitalism was partly acquired from the West and partly evolved domestically; but Russian capitalism, of the late Tsarist period, though it looks backward and clumsy as compared with British or American capitalism, was vigorous in its spread overland into Asia and its penetration of the steppe frontier.¹⁶

¹⁵ G. A. Bogdanoff, in *North Manchuria and the Chinese Eastern Railway*, ed. I. A. Mihaloff, Harbin, 1924, p. 67.

¹⁶ Because the expression "steppe frontier" is here used to include the deserts and oases of Central Asia, it is well to note that the original Russian word *step'* is used much more precisely to describe "a large treeless plain of grassland." The Russian definition of steppes, semideserts, deserts, and extreme deserts, and of corresponding zoological zones, can be seen in *Bolshoi sovetskii atlas mira*, ed. A. F. Gorkin, O. Yu. Shmidt, V. E. Motylev, M. V. Nikitin, B. M. Shaposhnikov, Vol. I, Moscow, 1937, Plates 43 and 44.

To some extent, in the nineteenth century expansion of Russia, the old process of incorporation was superseded by a new process of subjugation. Such peoples as the nomad Kazakhs and agricultural and urban Uzbeks of Central Asia were increasingly reduced to a colonial status of inferiority. Nevertheless the Russians continued to incorporate Asiatic peoples into their own changing order much more than the British did, for example, in India.

On the Chinese fringe of the steppe, the situation was different. China rather narrowly escaped being subjugated as completely as India. Capitalist forms were imposed on China more than they were adopted by China. Even those Chinese who of their own accord began to go in for capitalist forms of enterprise had to do so under conditions which made them to some extent subordinate to foreign capitalist enterprise within their own country.

In spite of these handicaps, however, the relation of the agricultural people of China to the steppe people of Mongolia was radically changed. With firearms to alter the military balance in their favor, and with railroads to increase their economic range, the Chinese were able for the first time actually to incorporate large areas of Inner Mongolia within their domain.

Use of the railroad for the first time established extensive agriculture, even on the relatively dry steppe, in a form which resulted in the permanent spread of the Chinese population rather than in a first step toward the conversion of agricultural Chinese into steppe nomads. This degree of change in the old relationship was possible simply because the railroads were able to bring grain a great distance from the colonized land into China, whereas under the old economic structure, with transport to urban consuming centers in carts drawn by animals which themselves consumed grain, the extreme range of the economic market had not been more than 100 to 150 miles.

This degree of change, while establishing the Chinese more solidly within the steppe than ever before, did not bridge the chasm which had always divided the culture of China from the culture of the steppe. It displaced a part of the steppe society

from a part of the steppe, but it did not transform either the old economy or the old society in the other part of the steppe, which had not yet been penetrated. On the contrary: the steppe society, because it had been displaced from so much of its old domain, became increasingly hostile to China, and its hostility began to take on a new and sharper nationalistic edge.

At this stage of development a new phase of transformation began in the old theater of Russian expansion, when socialism succeeded capitalism.

In the first place, the Russian Revolution brought about an abrupt reversion from the nineteenth century form of subjugation to the older mode of historical activity which I have here called "incorporation." The revolution which brought civil war to the Russians also brought civil war to the Asiatic peoples of Russia. The old princes, chieftains, and headmen of these peoples had been closely associated with the Russians and, even in subjection, had been partly incorporated into the Russian system of rule and power. In order to preserve their privileges and relative advantages, they had to align themselves with the Whites against the Reds. Consequently that part of the common people under them which felt itself oppressed by its own upper class and quasi-ruling class went over to the revolutionary side in the Russian civil war.

In the second place, therefore, the Russian Revolution cannot be regarded simply as a change of rule among the Russians which resulted in the imposition of a new form of rule on Russia's Asiatic subjects. It must be regarded, rather, as a change in the form of rule among both Russians and Asiatics which resulted in incorporating the victorious group among the Asiatics with the victorious group among the Russians. Once this political decision had been written into history, further economic change among the Asiatics no longer rated as a visible sign of exploitation imposed by conquerors. It came to mean, instead, a transformation going on in common among Russians and Asiatics. By the victorious group among the Russians this was regarded as strengthening their position, and by the victorious groups among the Asiatics it was also regarded as a strengthening of their position.

On the basis of the data here assembled, a number of conclusions are suggested. Both the sufficiency of the data and the validity of the conclusions should, however, be tested by further historical research and field investigation.

(1) The old and immense steppe frontier between Europe and Asia is part of a still wider frontier which includes forests on the north of the steppe and a landscape of deserts, oases, and mountains south of the steppe.

(2) Historically, this frontier cannot be regarded simply as an arena for the competitive expansion of the peoples adjoining it. At times "civilization," in various forms, expanded into the frontier; but "frontier" conquest of "civilization" was also a normal historical form.

(3) Industrial and technological forms and also new social and political forms developed outside this Inner Asian frontier are capable of being projected into the frontier zone.

(4) The fact that the frontier zone can be entered from the outside does not mean, however, that the zone itself is a vacuum now any more than it was in past history.

(5) In past history, a number of processes have operated, including:

(a) Transformation or conversion of peoples entering or leaving the frontier area;

(b) Displacement of peoples within or at the edge of the frontier area;

(c) Incorporation of individuals, classes, or whole peoples within the systems of other peoples.

(6) As a result of the Russian Revolution, a new standard has been established, which may be called the standard of utilization. Within the Russian theater of activity, under a system of socialization and collectivization, it is no longer adequate to speak of "the frontier conquering civilization." What we appear to have is a merging of the "frontier" with "civilization," and a common utilization of the total resources of the total area. This common utilization is characterized by rapid industrialization of both Russian and non-Russian societies within the Soviet political struc-

ture, and by the integration of both pastoral and agricultural economics with the industrial economy.

(7) To the extent that these conclusions may be valid, we must avoid oversimplification in thinking of a race between Russia on one side and China (or China and other countries) on the other side to fill up an empty frontier margin between them. The frontier is not empty. It is inhabited by different peoples. These peoples are small in numbers, compared with such massive peoples as the Russians or the Chinese. Their situation, however, is entirely different from that of the American Indians, who had a powerful and rapidly growing people on one side of them only. The Inner Asian frontier peoples have great and powerful peoples on more than one side of them. They therefore have some degree of choice. Whether their ultimate fate be subjugation, or association and alliance, they can try to influence the decision by their own action. For this reason, their power to influence events is much greater than their numbers and their generally low technological development would appear to indicate.

(8) The problems involved are not restricted to the frontier between China and Russia. They are found throughout the Inner Asian frontier zone. Embedded and sometimes as it were encysted, like the Moslems of northwest China, within the political boundaries of the states which abut on the frontier zone are minorities of many different kinds. The unity of the majority may have a strongly ethnic character, as in the case of the Mongols, the Uighurs of Sinkiang or Chinese Turkistan, or the Kurds of Iran, Iraq, and Turkey. In other cases, such as the Moslems of northwest China, the main distinction is cultural rather than ethnic. In almost all cases, however, the minority has marked peculiarities of economic structure and social organization.

(9) The condition of change and fermentation in contemporary Asia is general and pervasive, as we know from recent events in Iran and elsewhere. We know that, in order to deal with the condition, the need for revision of old policies and formulation of new policies is being widely studied. In Sinkiang, for instance, the Chinese Government is endeavoring to maintain the full ex-

tent of its political frontiers by applying, within them, a new policy which permits non-Chinese groups and communities to function to some extent as political entities. We know practically nothing in detail about the way this policy is working out—foreigners have recently been debarred from traveling in Sinkiang; but President Chiang Kai-shek's speech of August 25, 1945, sanctioning the recognition by China of the independence of Outer Mongolia indicates the realization by the Chinese Government that frontier politics has entered a new era, and that the self-determination of frontier peoples is inseparable from the self-determination of all Asiatic peoples, especially colonial peoples.

(10) A new criterion is clearly needed whenever policy affecting such peoples is to be considered. It is no longer simply a question of how expensive it will be to take them over or how expensive maintenance of the present form of rule will be. It will pay to ask also, "Can they be won over by an association of interest?"

Outer Mongolia, now the Mongolian People's Republic, is the only independent state which has arisen within the Inner Asian frontier.¹⁷ Inferences drawn from Outer Mongolia should not be applied indiscriminately to other frontier questions, because the Mongols are in several respects unique. Their cultural and economic uniformity is exceptional, and it extends over the largest territorial unit in the entire frontier zone. Sinkiang approaches Mongolia in size; but in contrast to the Mongol uniformity it exhibits an extreme cultural and economic diversity.¹⁸

Historically, the Mongols embody a tradition of many centuries of resistance to absorption by China. In contemporary politics they represent association, but not incorporation, with the Soviet Union. The Mongols of Outer Mongolia, numbering only about one or one and a half million in a vast and strategi-

¹⁷ Owen Lattimore, "The Outer Mongolian Horizon," *Foreign Affairs*, July, 1946, Eleanor Lattimore, "Report on Outer Mongolia," *Far Eastern Survey*, Nov. 6, 1946

¹⁸ Owen Lattimore, "Chinese Turkistan," *Open Court*, Mar., 1933, and Introduction to Martin R. Norins, *Gateway to Asia: Sinkiang*, New York, 1944.

cally important country with great but undeveloped economic resources, were situated between Russia, China, and Japan. The Mongols as a whole, except for a few advanced revolutionary leaders, undoubtedly began by regarding their association with the USSR, after the Russian Revolution, as the least of three evils—the displacement policy of China and the conquest policy of Japan being clearly worse.

As a consequence of their association with the Russians, however, the Mongols were admitted to the Russian standard of common utilization of resources. In some respects, this form of association appears to resemble the customs union, in which individual sovereignty is maintained but a community of economic interest is organized. In other respects, it appears to resemble the Rooseveltian Good Neighbor policy.

By virtue of their Soviet alliance the Mongols, though they suffered casualties in border conflicts with Japan, were never deeply invaded by Japan. At the end of the war they emerged as victorious allies of the USSR with the only intact, improved, and flourishing economy of any people in Asia. Whatever the beginning of their association with the Russians, therefore, their present relationship must be assumed to be one of gratitude and strengthened alliance.

With all due allowance for the fact that the Mongol example cannot be exactly duplicated anywhere else along the Inner Asian frontier, it is important. No country whose interests reach into Inner Asia, or whose policies extend toward Inner Asia, can afford to disregard this example, or to ignore the long historical development and intricate historical processes of which it is the present culmination.

In the meantime China's gravitational pull over the peoples of Inner Asia, though potentially strong if the country should become unmistakably prosperous and progressive under a political system assuring both equality and cultural autonomy to non-Chinese peoples within the Chinese state, is for the moment weak and uncertain. The attitude of the Inner Asian frontagers of China is that if association with China forces them to convert

themselves into Chinese, while the Chinese society itself remains conservative and unchanging, they will resist assimilation.¹⁹ A successful renewal of the Chinese advance into Inner Asia is only likely in connection with far-reaching changes in the social fabric and political structure of China.

¹⁹ Owen Lattimore, "The Inland Crossroads of Asia," in *Compass of the World*, ed. Hans W. Weigert and Vilhjalmur Stefansson, New York, 1944.

THE POLITICAL GEOGRAPHY OF THE NEW INDIA

By ROBERT STRAUSZ-HUPÉ

India, emerging from a condition of political subordination to the position of sovereign independence, comes face to face with the paradox of western civilization: the contradiction of unitary technology and divisive nationalism. "For more than a hundred years," Lord Mountbatten proclaimed in his address to the Indian people on the eve of Britain's relinquishment of control, "four hundred million of you have lived together, and this country has been administered as a single entity. This has resulted in unified communications, defense, postal services and currency, an absence of tariffs and customs barriers, and the basis for an integrated political economy." The unification of modern India was forged by English arms, administration, industry, and language. The disintegration of the unitary empire of the Moguls, beginning in the seventeenth century, signaled the rise of powerful succession states, the Mahrattas, the Sikhs, and the rulers of Bengal, Hyderabad, and Mysore. It was Britain's military conquest of India, beginning on the plains of Bengal and consummated a hundred years later in the hills of the Punjab, that reversed the centrifugal tendencies resulting from the decadence of Mogul power, imposed unitary British rule upon the embattled rival rulers and religious

ROBERT STRAUSZ-HUPÉ, Associate Professor of Political Science at the University of Pennsylvania. Both A.M. and Ph D were granted by the University of Pennsylvania. He came to this country in 1923 from Austria, where he attended the University of Vienna. He was for approximately ten years associated with American banking concerns. In 1937 he turned to teaching and writing, and he is the author of *Axis America*, 1941; *Geopolitics*, 1942; *The Balance of Tomorrow*, 1945.

communities, opened the entire subcontinent to British trade, and supplied, in spite or perhaps because of the highly pragmatic intent of the conquerors, the physical and intellectual tools for the making of an Indian Nation.

British diplomacy and arms insured the external security of India. British trade and the exigencies of modern government fostered the development of a unitary system of transportation and communications and endowed India with the rudiments of modern technology: metallurgical and mass manufacturing industries, electrical power and irrigation schemes, public hygiene and skilled man power. British administrative achievement and India's economic transformation are poignantly expressed by the vital statistics of India: although the expectancy of life of the average Indian is still woefully low by western standards, the population of the peninsula has doubled within less than a hundred years. The cooperative achievements of the British and the Indian people would, however, not have resulted in the making of an Indian nation had they been confined to the material plane.

The system of education, particularly higher education, opened to Indians the storehouse of western science and political thought. The medium of transmission was the English language. The English language, too, is the lingua franca of all India, the common language of science, technics and, most importantly, of organization and politics. "In and through English," Lord Halifax wrote in his measured appraisal of the British record in India, "the ideals of Indian nationalism have found expression. Without English no nation-wide nationalist movement could have come to birth or flourished in India."¹ Although impressive evidence supports this proud claim, the very nature of Indian nationalism, particularly its western derivation, has put in doubt the greatest achievement of Anglo-Indian rule; namely, the unification of India. For the evolution of Indian nationalism conforms to the pattern traced by nationalism everywhere: the crystallization of racial or religious consciousness, a process not infrequently

¹ "India: Two Hundred Years," *Foreign Affairs*, Vol XXVI, No. 1, p. 112.

accompanied by the atrophy of older, universal beliefs; the bid for self-rule and dissolution of historical multinational states; the emergence of new national minorities and exacerbation of racial and religious conflict within the new states created for the express purpose of satisfying the demands for ethnic justice and cultural autonomy; and the subordination of the economy to the political dialectic of nationalism. There is hardly a major feature of the scheme for the partition of India which does not suggest an analogy with this or that aspect of the dismemberment of the Austro-Hungarian, the Ottoman and the Czarist empires. The most striking parallels are insistence on precise national "communal" frontiers, and strict application of the majority principle to allocation of territory—two concepts which incidentally reflect characteristic western, not Asiatic, attitudes towards problems of territorial settlement—and spectacular disregard of economic factors and geographical features.

The roots of the Indian dilemma lie deeper than the comparatively recent developments which led to the secession of the Moslem League under the leadership of Ali Jinnah from the Central Government and the establishment of Pakistan, a country owing its very conception only fifteen years ago to a few Moslem intellectuals and a synthetic slogan—"pakistan." The traditional, historic, and psychological barriers which separate Moslem minority from Hindu majority are stark realities, not figments spun by the ambitious fancy of Moslem politicians nor pretexts for continued British interference. The mutual antagonism of the communities needed no positive encouragement; it has found spontaneous, albeit sanguinary, expression in a series of appalling massacres in the period shortly before and after the official transfer of power by Britain. It is true that the Moslem population forms only one-fourth of the total population of India, and that conceivably a solution might have been found which would guarantee the rights of that minority and insure the adjustment of communal differences by the operation of democratic processes—were such concepts as minority rights and democratic process indigenous to India.

Under the circumstances surrounding the settlement of August, 1947, the intensity of communalism precluded that rational solution which would have preserved the integrity of India. Ali Jinnah has beyond question deliberately deepened the cleavage between Moslem and Hindu. But the Moslem community is not only a minority of distinct cultural attributes, but also an impoverished minority. It is, moreover, unwilling to submit its case to the arbitrament of a majority which it has not learned to trust. The least that can be said in extenuation of the disruptive course pursued by the Moslem League is that the leaders of the Congress Party persistently underestimated the real force behind Moslem demands for full autonomy, pretended to ascribe Moslem particularism to British intrigue, and failed to grasp the actuality of Islam as a world-wide movement. Pakistan represents the polarization of Moslem sentiment. The very extremism of the formula harbors grave dangers for the domestic well-being and external security of India. Yet the pressure of events and time—in view of Britain's patently sincere determination to leave India in June, 1948, time was indeed of the essence—appears to have allowed for no other solution. Partly yielding to British mediation, partly trying to avoid civil war, the Hindu leaders conceded Pakistan, on the condition that Punjab and Bengal be divided according to Moslem and non-Moslem districts. Massive population exchanges, involving the evacuation of nearly ten million Moslems, Sikhs, and Hindus, gave the solution a tragic finality which precludes amicable revision of the settlement in the near future.

A glance at the map of partitioned India recalls the quaint jumble of European political geography before the advent of the great contiguous nation-states. India is now split into five parts: eastern Pakistan, western Pakistan, Hindustan, the Hindu enclave of Assam, and the independent principality of Hyderabad. A distance of one thousand miles separates the two Pakistans; a distance of three hundred miles, the Assam enclave from the mass of Hindustan; Hyderabad is ringed solidly by territory taken over by the Union of India (Hindustan).

The plebiscites conducted in the disputed sections and the de-

cisions of the boundary commissions determined the shape of the newly created states as follows:

Hindustan includes Travancore, Mysore, Madras, Bombay, Bihar, Orissa, the Central Provinces, the United Provinces, the Western Indian States, the Central Indian States, the Eastern States, and Rajputana. Most of the 563 Princely States have joined Hindustan. Under the accession of agreements they surrendered control of defense, foreign relations, and communications to the central authority, but retained control over internal affairs, thus severing in effect their connections with the British Crown established under the doctrine of paramountcy. The last state to accede was the important frontier state of Kashmir, a predominantly Moslem territory ruled by a Hindu prince.

In the divided districts of Assam, Punjab, and Bengal, the boundary commissions' decisions were as follows:

Lahore, fifth city of India with a population of nearly 700,000, went to Pakistan. Nanakana Sahib, holy shrine of the Sikhs, was attributed to Pakistan. West Punjab or Pakistan territory includes the Multan and Rawalpindi divisions and three districts of the Lahore Division; namely, Gujanwala, Sialkot, and Shekhupura. East Punjab, territory of the Union of India (Hindustan), includes the Jullundur Division, Ambala in the foothills of the Himalayas, and the Amritsar Division. Amritsar, Sikh holy city, is, with a population of 400,000, the ninth city of India. To the northeast of Lahore the Ravi River marks through most of its course the division of Punjab territory between Pakistan and Hindustan. The award of the Bengal Boundary Commission assigned to East Bengal (Pakistan) the whole of the eastern seaboard of the Chittagong Division, bordering Burma, and the Dacca Division to the north of Chittagong. West Bengal (Hindustan) includes the Burdwan Division to the northwest of Calcutta. The part of the Rajshahi Division circumscribed by the triangle above the confluence of the Jamuna River with the Ganges, has been included in East Bengal. As a result of the inclusion in East Bengal of Khulna, some eighty miles east of Calcutta, the major portion of the Ganges and Brahmaputra Delta region comes to lie within

Pakistan territory. In West Bengal are the Delta districts of Calcutta, Parganas, and Murshidabad, and the Darjeeling District of the Rajshahi Division.

The award of the Bengal Boundary Commission regarding the Sylhet District of Assam, whose inhabitants voted to join Pakistan, has resulted in the transfer of the whole district from the Province of Assam which lies within Hindustan, to the new Pakistan Province of East Bengal.

The population of the Indian Union is 300,000,000 in a territory of more than a million square miles. Pakistan, including Baluchistan, the Northwest Frontier Province, Sind, and Manipur, comprises a territory of 360,000 square miles; its population is over 70,000,000. The territory of Hyderabad consists of 82,000 square miles with a population of 16,000,000.

The detailed mapping of the boundaries between the new states placed large groupings of Moslems in Hindustan and comparable concentrations of Hindus and Sikhs in Pakistan and thus multiplied the majority-minority problems which the partition of India was to have solved—a result surprising to no one familiar with the recent history of European boundary making under the aegis of ethnic justice.

Although the idiosyncrasies of frontiers drawn according to religious divisions are likely to give rise to characteristic minority problems, these appear paltry indeed measured by the magnitude of the economic problems posed for both succession states by the dismemberment of India.

The unequal distribution of India's natural resources makes it a foregone conclusion that political division, if it is accompanied by economic division, will entail the disorganization of Indian economic life. In no field has the unity of India been more apparent than the economic. The disruption of economic unity would extend the conflict between the communities from the religious to the economic sphere and add incalculably to the political and social tensions which are masked by the deliberate emphasis placed by the leaders of both parties, Congress Party and Moslem League, upon the purely national-religious issues of

the partition settlement. Of the two countries, Pakistan is primarily agricultural and pastoral and comparatively poor; Hindustan is rich in natural resources and contains the bulk of India's commercial wealth, industrial plant, and skilled man power. Hindustan's economic strength, present and potential, lies in its industrial resources. The rich areas in Bihar and Orissa yield a greater proportion of coal and iron ore than any other part of India. The proximity with respect to each other, and to centers of population and commerce, of coal deposits estimated at 10 billion tons, and iron ore reserves estimated at 2.7 billion long tons of high-grade ore, appears to destine these two provinces of northeastern Hindustan to develop as the most important basis of heavy industry and thus of modern state power. The Tata Iron & Steel Company at Jamshedpur, one hundred miles west of Calcutta, is said to be the largest steel plant in the British Empire. High-quality special steels are manufactured by the Steel Company of Bengal, which, too, draws on the Orissa ore reserves, second only in extent to those of the United States and France.²

India is abundantly supplied with manganese, the most important alloy metal used in steel making. The leading producing areas, the Central Provinces and Madras, are in Hindustan. Virtually all known deposits of copper and gold ore of commercial grade are situated in Hindustan, and so are the chief sources of such important nonmetallic minerals as bauxite, magnesite, sheet mica, and phosphate. The thorium deposits of Travancore, at the southern tip of the Peninsula, place Hindustan in the highly select group of states controlling ample reserves of radioactive minerals suitable for the manufacture of atomic energy. Deposits of chromium, potassium, lime, gypsum, and fire and pottery clays are about equally divided between Pakistan and Hindustan. It is only with respect to petroleum that the Moslem territories of India appear more abundantly endowed than Hindustan. The richest oil fields are in western Pakistan; the geological structure

² For a comprehensive survey of India's mineral resources and their relative distribution in Hindustan and Pakistan see Charles H. Behre, Jr., "India's Mineral Wealth and Political Future," *Foreign Affairs*, Vol. XXII, No. 1, pp. 78-93.

of the Peninsula proper, the Pre-Gondwana rocks, the Pre-Cambrian Purana system and the Deccan Trap, excludes the discovery of large oil resources in Hindustan. However, neither the oil resources of Pakistan nor the small oil fields of Assam are rich enough to supply India's growing needs of motor fuel. Most of India's oil was imported during the war from the Persian Gulf, and much attention was given recently to the production of power alcohol from the waste products of the sugar refineries, all of which are located in Hindustan.

India's minerals are so distributed that partition on the basis of religion makes the Hindu state rich and the Moslem state poor. Not only is this fact true for the present, but it will become more strikingly evident as the industrialization of Hindustan advances.

The economic consequences of partition can be summed up as follows: Within Hindu India are the three great ports Bombay, Calcutta, and Madras, the bulk of the cotton mills, and the manufacture of iron and steel, as well as practically the whole mineral wealth. Hindu India possesses nearly all the large-scale industries, hydroelectric and irrigation works. Hindu India has 771 factories of seven major industries; Pakistan has nine factories. Hindu India enjoys overwhelming advantage as regards capital, technical skill, and managerial talent. Most of the indigenous banking and insurance business is managed by Hindus and Parsees. Pakistan holds the advantage with respect to food supplies and industrial crops. Hindustan is critically dependent on the wheat surplus of the Punjab. Much of the cotton that feeds the mills of Bombay and Ahmedabad is grown in Pakistan. Hindu India has just enough raw jute for her own needs; but unless she imports the large surplus of the Pakistan crop her jute mills will lie idle—perhaps the most striking example of the economic monstrosities spawned by the partition scheme. The normal postwar dislocations have been exacerbated by the partition in all fields of economic activity; yet Pakistan appears to be far more vulnerable than economically more differentiated Hindustan to disturbances arising from changes in world economic trends, and to be highly dependent on the least predictable factor

of agricultural economics—namely, the weather. Pakistan's annual budget is likely to become an annual gamble in rains and the world market quotations for wheat, rice, and cotton. Moreover, the two sections of Pakistan will, in the foreseeable future, be more dependent for markets, capital, and skills upon Hindu India than upon each other.³

It is still too early to attempt a thorough evaluation of the consequences flowing from the political dismemberment of India as regards the prospects of industrialization. However, the celebrated Bombay Plan ("A Plan of Economic Development for India" published in January, 1944) may be taken as a guide to Indian economic thought: its authors are the leaders of Indian industry and include J. R. D. Tata and G. D. Birla, premier steel master and textile manufacturer, respectively. The Plan calls for the trebling of the present national income within a fifteen-year period at an estimated cost of 30 billion dollars. It proposes to nearly double the proportion of population engaged in industry and trade, reduce the proportion engaged in agriculture by one-fifth, and increase agricultural production by such means as better farming methods, improved equipment, and reform of the system of land tenure.⁴ Although the plan has been severely criticized in Indian as well as British quarters—it relies heavily on "created money" and does not envision a minimum wage level and social insurance—its sponsorship endows it with considerably more than theoretical interest. It represents the scheme for Indian industrialization as conceived by India's most powerful industrialists, who also happen to be among the most influential backers of the Congress Party. It is, too, a scheme

³ For an analysis of the comparative economic position of the Union of India (Hindustan) and Pakistan see the *Bulletin* of the National City Bank of New York, Sept., 1947, and "The Economics of the New India," *Great Britain and the East*, Vol. LXIII, No. 1776, pp. 42-44.

⁴ Since the Bombay Plan is predicated on the assumption that India's population will have increased, by 1962, to 494 million as compared to 338 million in 1932, it envisions an *absolute* increase of the population engaged in agriculture; namely, from 106 million in 1931 to 130 million in 1962. For an analysis and critique of the Bombay Plan see Gordon Griffiths, "India's Economic Development," in *Towards World Prosperity*, ed. Mordecai Ezekiel, New York, 1947.

much more readily adaptable to Hindustan than to Pakistan; its execution would beyond doubt increase rapidly the economic disparity between the two Indian countries: have and have-not would face each other across the wide gap which then would separate the Hindu India of the Bombay Plan, with its high-pressure industrialization in the image of Soviet planning, from the timeless village society of Moslem India.

The telescoping of political, economic, and social developments is characteristic of Asiatic peoples as they cross the threshold of the machine age: in contrast with the successive phases of western historical evolution there is a virtual occurring-together of national awakening, industrialization, and social revolution. Although the withdrawal of Great Britain has focused the attention of the world upon the problem of communalism, tremors of social upheaval are beginning to shake the internal structure of the newly created states. Division has set the stage for far-reaching realignment of the political forces. It is unlikely that the Hindu Congress Party and Moslem League can command much longer the allegiance of their present followers. Communalism is too narrow an issue to remain the focal point of Indian politics. The Socialists of the Second International, who have formed a highly articulate opposition group within the Congress Party, may decide upon secession and outright opposition to the bourgeois and conservative rank and file of Congress politicians. Most competent observers agree that the Communists have built for themselves an influence which is greater than can be gauged from their wartime tactics and ambiguous attitude towards the Congress Party. The measure of their strength will be revealed when India settles down to parliamentary politics and the pattern of its relation to the Great Powers becomes clearer. On the right, the Congress Party meets the growing opposition of nationalistic and religious extremists whose party programs and organized militancy are distinguished by unmistakably fascist and national socialist overtones.⁵ Similarly, the

⁵ The leading activist groups are the Hindu Mahasabha, the Hindu Student Organization, Rashtriya Sevak Sangh (National Service Organization).

growing urgency of economic issues threatens the political monopoly of the Moslem League. While the 30,000,000 Moslems living in India proper will have unity forced upon them by their minority status, the Pakistan Moslems will certainly divide on internal issues.

Britain's withdrawal accelerated the pace of Indian politics. The accomplished fact of national emancipation foreshadows a shift of the point of emphasis from the more restricted frame of reference of British-Indian and Moslem-Hindu relationships to the relations of the Indian people with the world community. The phase now opening of India's political revolution invites the analogy of China: The great contending ideologies of the West have penetrated the historical structure of Chinese society, loosened by the impact of the western notion of nationalism. Similarly, the elements of the class conflict which is tearing the fabric of Chinese society are present in the Indian situation, dominated as it still may be by the tensions of communalism. The stirrings of the urban-industrial masses, the vast inequities of the system of land tenure, and the anachronistic position of the Princes point towards a rapid activation of the latent forces making for revolutionary change. It does not require unusual prescience to conclude that the pattern of world conflict will determine increasingly the alignments of Indian politics, and that forces from without will tend to fill in India the vacuum created by the decline of empires and great powers. That American and Soviet influences will compete in shaping the future of India is an inescapable consequence of the decline of British power.

In the past, American trade with India was slight. American investments were negligible, consisting mostly of assembly units of American automotive and oil companies. India's place in American trade was radically changed during the war as a result of Lend-Lease shipments. In 1944, the nonmilitary imports amounted to \$400,000,000 and represented a tenfold increase over the prewar share of the United States in India's foreign trade. Even the partial realization of the objectives set by such projects

as the Bombay Plan, by raising the purchasing power of 400,000,000 people, would have a profound effect upon international trade. The most effective and humane means of the economic transformation of India—most effective and humane because they do not place the heavy task of capital formation upon the hard-pressed peasantry—is credits tapping the immense productive capacity of the United States. This unequaled power to produce gives the United States the power to smooth the course of economic development in India and thus to safeguard, by virtue of the gradual and nonviolent nature of the process, the continuity of cultural and spiritual development.

Whatever influence the Soviet Union can exert upon India will spring from geographical proximity, ethnic and religious association, and ideological attraction, not from capacity to aid materially in the economic development. Only the narrow, elongated appendix of eastern Afghanistan separates Russian territory from the Indian state of Kashmir—a principality which has chosen to join Hindustan—and the Moslem territory of Chitral. The growing solicitude of the Soviet Union for the cultural aspirations of the Moslem peoples of Soviet Central Asia, which incidentally represents a notable deviation from earlier Soviet policy towards Islam, may yield valuable returns in terms of future Soviet-Pakistan relations, although the sophisticated leaders of Moslem India may remain a trifle skeptical of Soviet sincerity in religious matters. The economic progress of the Tadzhik, Uzbek, and Kirghiz peoples under Soviet rule supplies Soviet prestige in the tribal society of Central Asia with a solid basis of achievement, and cannot fail to impress, particularly if means of economic improvement are not supplied from other quarters, the kindred peoples across the Indian border. The penetration of Sinkiang by Soviet political and economic influence, transmitted by border peoples noted for their shifting allegiances, may set the pattern for the tactics of Soviet transmontane influence. The pull of Stalinist-Marxist ideology transcends the range of geographical contiguity and ethnic affinities: the nucleus of a communist party

organization exists now in India and exercises a by no means negligible attraction upon certain sections of intelligentsia and labor.

The world-wide conflict between the Soviet bloc and the western democracies casts its shadow over Indian politics. It was probably the acuteness of the international crisis that furnished the single most compelling argument for the speedy conclusion of the Hindu-Moslem settlement, and curbed extremist agitation for complete and immediate severance of Indian-British connections. Had Hindus and Moslems not come to an understanding, civil war would have been a certainty. Nowhere would this catastrophe have entailed graver consequences for the security of India as a whole than in the border areas of the Northwest Frontier, the Punjab, and the Afghan borderlands. The stage would have been set for the intervention of the Moslem border tribes on the margins of the Soviet sphere of influence, if not for direct Soviet intervention, and thus for the operation of a process similar to that which led to the fateful clash of ideological and power interests in China.⁶

The outstanding military problem for the two great states of India as well as for Great Britain is to ensure the security of the Afghan borderland from the great military base at Quetta to the Khyber Pass. This area is the strategic key not only to India but to Britain's remaining positions in the Indian Ocean and the Southeast Pacific. Its loss would mean the subjugation of India, the extension of Soviet influence to Southeastern Asia, and the loss of half of Britain's overseas trade. It is unlikely that the problem of Indian defense can be solved without the cooperation of Britain. Mutual interest appears to dictate close military col-

⁶ The idea of Pathanistan appears to enjoy the discreet support of the Afghan Government. The leaders of the movement in the Northwest Frontier Province campaigned, before the partition, under the label of the Congress Party. The mounting agitation for an independent Pathanistan, which would unite the Shinwari and Afridi tribes between the Durand Line (the official border between India and Afghanistan) and the border between tribal and settled territory, with the Pathans living in the Frontier Province, is directed against the Moslem League.

laboration between the British Commonwealth and the Indian Dominions.

If strategic necessity argues forcefully for continued association of India and the British Commonwealth, the economic argument is stronger still. India's five-billion-dollar credit in London, earned at the price of terrible privations during World War II, is India's stake in the productive capacity of Britain. It can be liquidated only through British exports; and British exports to India, particularly capital goods, are the simplest and least costly solution of the problem of Indian economic development, for no other trading nation possesses the intimate knowledge of Indian markets, which is the fruit of two centuries of Anglo-Indian association. Conversely, Britain's stake in the form of capital investments and trading outlets in India cannot be written off without serious damage to the standard of living of her people. No other country, therefore, has a greater interest than Britain in the establishment of viable relations between the two great religious communities. Britain's concern for the reconciliation and prosperity of the Indian people derives from motives less simple than the clichés of chastened colonialism suggest: it is, it always was, based on strategic and economic self-interest; it has been mellowed by two centuries of shared experience. The British Raj with its glories and iniquities is a thing of the past. Its vindication is that its liquidation does not weaken, nay strengthens, the case for continued collaboration between the British Commonwealth and independent India. That continuity of historic association, in a new form adapted to the necessities of the times, offers the best hope for the peaceful and constructive solution of the Indian problem.

Until lately, in times of shortage, those lands with purchasing power bought and fed their people while others starved, often unnoticed and unnumbered. Now, in this present time of world food crisis, the richer lands again buy and feed their people. But they deliberately buy less and distribute more skillfully, so that fewer will starve than formerly would have been the case. Most of those who starve in the next few years will probably be, as usual, in East and Southeast Asia, though Central Europe may provide an abnormal number. It is to be remembered in this connection that the cereals which enter world trade are a small fraction of the whole. When we are told that the world shortage of wheat and of rice is so many million tons, that is a shortage in transported cereals. The real deficit is not known. It is to be remembered, too, how narrow is the distinction between virtuous thrift and avaricious hoarding. If 100 million small cultivators in Southeast Asia, when famine is rumored, retain each so little as an extra 10 kilograms of grain, the towns will be short of a million tons.

The problem is of especial significance within the British Commonwealth and Empire, a sample of the whole world which contains abnormally great interterritorial good will. In the Mother Country, Great Britain, some forty-five million people import about half their total sustenance. Highly industrialized, they support a high standard of living. The young and vigorous self-governing Dominions overseas, totaling less than twenty-five millions of European origin, have at least as high a standard of living but are among the world's greatest food-exporting countries. The subcontinent of India, with its 400 millions, imports only a fraction of its food and has an extremely low average standard of living. The Crown Colonies, so diverse in their evolution, character, people, and appearance, are scattered along the path which has India and Canada at its two extremes. The United Kingdom imports the largest quantity of food of any country in the world. India, with nearly ten times the population and one-fifth of the world's total, imports relatively little to meet her immense and swelling need.

We know that in fact we are not producing enough now. But what we need to know, on the world scale, is whether the land is potentially capable of producing enough to meet future needs, and if capable, how soon. The present answer is: "We do not know." The reason lies partly in our inability to view the background to these questions as an integrated and dynamic whole. So far we have largely neglected to measure and to equate real need and supply, and to assess potential need and potential supply. Our thoughts, and then our policies and actions, need to be more squarely set upon an appreciation of the whole background and its measurable parts, rather than upon selected factors and trends which emerge from the background and are seized upon by highly competent enthusiasts. Indeed the enthusiasm of the specialists perhaps limits the appreciation of the background as a whole. In presenting the background one is facing the same type of problem as besets the map-maker in his attempt to set down on two-dimensional paper the three dimensions of the globe. One needs to integrate, first, changes of real need as measured by changes in human numbers and standards; secondly, a group of factors helpful in increasing supplies—for example, the cultivation of new lands, irrigation works, the use of new crop varieties and cultivation practices; and, thirdly, a host of factors tending to diminish supplies, including land degradation and irrational exploitation. This background in its entirety must surely be the basis of policy, both on the national and on the international scale.

First, what is happening to the total population of our species? This is the central factor which measures total needs in food, organic matter for other purposes, and much else besides. In fact, we live in days of unprecedented increase of population, and therefore of unprecedented increase of real needs. We have now become aware that the majority of mankind has legitimate requirements in food and other organic matter far beyond the level which supplies have yet reached. It follows, if we are to approach the adequacy we know to be desirable, that the rate of production of biological resources must increase much faster than

our numbers. It is the relative rates of increase of population and supply that are of leading importance.

There is a remarkable lack of appreciation of the great increases which are taking place in the numbers of our own species, and indeed of population affairs in general. The usual assumption is that, because we reproduce so much more slowly than our domestic animals, and the length of each generation is so long, our own numbers cannot increase rapidly. This assumption is false. Mankind takes such peculiar care of its relatively few young that actual increases in man's numbers can be rapid, though not approaching the extreme rapidity of increase which sometimes is observed among other species under special conditions. In the United Kingdom the population has increased approximately eightfold in the dozen generations since the middle of the seventeenth century. In the four generations of the nineteenth century the population quadrupled and this despite heavy emigration.

World figures cannot of course be strictly accurate because census-taking is a comparatively recent innovation. Carr-Saunders, among others, has assessed the evidence available and provides the following table,¹ which surely cannot be very far from the truth:

REVISED ESTIMATE OF THE POPULATION (MILLIONS)
OF THE WORLD, 1650-1933

	1650	1750	1800	1850	1900	1933
Europe	100	140	187	266	401	519
North America	1	1.3	5.7	26	81	137
Central and South America	12	11.1	18.9	33	63	125
Oceania	2	2	2	2	6	10
Africa	100	95	90	95	120	145
Asia	330	479	602	749	937	1,121
World total	545	728	906	1,171	1,608	2,057

It will be seen that world population has increased roughly fourfold during the three hundred years in which the population of

¹ A. M. Carr-Saunders, *World Population* (Oxford, 1936), Fig. 8, p. 42.

Great Britain multiplied more than eight times. Carr-Saunders points out that this modern trend towards much increased numbers must be unprecedented in human history. It follows that we live in a time when total human needs, and total human pressure on the biological resources of the world, are rising at an unprecedented rate. This pressure is made all the greater because, in the last few decades, world opinion has begun to recognize that human needs should be met by adequacy for full individual development, and not only by sufficiency for survival and reproduction. At the present time it is doubtful whether we are in a position to provide, on a world basis, even enough for the survival of many. The biological budget, of numbers, needs, and production, for the coming decades requires all the more serious consideration.

The present increase in human numbers is, of course, not a process which is going on equally all over the world. In general, the fourfold increase of world population in the last three hundred years has been the result of decreased mortality—a decline in the death rate and not an increase in reproduction. Because we value the individual human life and are philanthropic in sentiment and in action, we must expect an extension of the process of removing causes of mortality. Therefore we must expect, and budget for, substantial further increases of world population in the coming decades. That is inevitable, unless the former causes of mortality are to be allowed to reassert themselves or unless we assume, as we have no right to do, that fertility will fall rapidly.

But surely, it may be asked, as the standard of living of the peoples of the world rises, will not their net reproduction rates, their replacement rates, fall as in the United Kingdom, in north-west Europe, in the Dominions, in the United States of America, and in most groups of European origin overseas? In particular, the English-speaking peoples on both sides of the Atlantic, now have a replacement rate which has fallen below unity. The only substantial sections of the white population of the British Commonwealth and Empire which still replace themselves are the French Canadians, the Irish, and the Afrikanders—about ten

millions in all. But these groups with a replacement rate near unity or below are not typical of the world as a whole. We have no good grounds for expecting that certain other populations of the world, now largely increasing in numbers, will shortly reach the condition of the English-speaking peoples. The fall in replacement rate may come, but it is likely to take several decades if not generations. If we are successful in our efforts to promote the well-being of all peoples, we must expect that for a while there will be an increased rapidity of population growth on the world scale.

It is appropriate at this time to illustrate the general trend towards substantial increase by taking India as the example, and by drawing freely on a recent pamphlet by Professor A. V. Hill.² He remarks: "There are over 400 million people in India today—more than eight times the population of Great Britain; and they are increasing now by fifteen per thousand annually, about six millions every year. The mortality is very high; at every age up to fifty-five it is four to eight times ours. . . . Only half the people born reach the age of 22, with us two-thirds reach 60. Of Indian girl babies born, only 57 per cent reach child bearing age, compared with 88 per cent of ours; and although in India only about half the girls who reach that age survive to the normal end of the child bearing period, as compared with 89 per cent in England, they nevertheless produce on the average twice as many babies as English women do. As public health measures and nutrition improve, the mortality will diminish and the population will increase still faster. . . . The present rapid increase of population is a sign that conditions have substantially improved in recent years. . . . The first of all India's requirements, if she is to be happy, efficient, and prosperous, is better health, and that implies beyond everything more and better food. But the immediate consequence of better health and better food is

² *India: Scientific Development or Disaster?* India-Burma Association 1944 (text of an address to the East India Association, July 4, 1944) Cf. also W. S. Thompson, "Population Changes in South and East Asia," *post*, pp. 325-337.

a lowering of mortality, which means a further increase of population. . . .

"In quality and calories together India needs at once at least 50 per cent more food than she now has: give her that and her population will increase not by 15 per thousand per annum but by 20 or 25—it is already 20 in the Punjab. Then in thirty years or so the food supply will have to be doubled again, to be three times what it is now. . . . If disaster can be staved off for thirty years, education, public health, and public opinion together may by then have produced a new outlook on the reproductive impulse, and so the situation may come under reasonable control. It depends very largely on the women of India that this should occur; then the plans of longer range for raising the standards of life all around can hope to bear fruit. . . .

"Wishful thinkers say that we have only to raise the standard of life and the birth-rate will automatically come down. By *how much* shall we have to raise the standard of life before the expected result will be obtained? And will not the first effect be the wrong way round? . . . Others . . . put their trust in industrialisation; but throughout the nineteenth century, the age of industrialisation, the population of England and Wales steadily increased, in spite of emigration, by 12–18 per cent every ten years. . . . Others look to education . . . but that is bound to take a long time, and birth-control has to encounter the fiercest prejudice of religion and custom before it is commonly accepted. . . .

"Let us see what this means. Let us assume that under the influence of gradually improving nutrition and better health the present rate of increase of population of 15 per cent per ten years rises in successive decades to 18 per cent, 22 per cent, and 25 per cent. Then, in thirty years there will be 730 million people in India. If, by then, the food available per person is 50 per cent more than at present (in value, i.e. in quantity and quality) the annual food production after thirty years will need to be 2.7 times as great as at present. Allowing a little for safety, plans

must be made at once for increasing the food production of India threefold in thirty years."

That then is Professor A. V. Hill's conclusion with regard to India: a population increase from 400 to over 700 million within a few decades, and a real requirement of food three times what it is now. The increased quantities of food which must be made available are enormous. As a rough measure it may be said that one ounce per day extra for everyone in India involves, at present, a total of roughly 4,000,000 tons per year. Over a million tons of extra food is needed each year to feed the present annual increase of between five and six million people.

India is not, however, an isolated example of present trends. A parallel course will probably be run by China if conditions improve. She holds another fifth of world population, with a mortality rate probably exceeding that of India. Indeed there is doubt whether her population has risen at all in recent decades. The same pressure on the means of subsistence, the same low standard of living, the same high mortality at all ages, is very evident too in such geographically circumscribed areas as Egypt and the West Indies. All these are cases where the rate of increase of the availability of food seems scarcely to have kept pace with population increase. Exertions in the fields of agriculture, engineering, and public health continue.

Migration is considered by some to offer a solution to many problems. Successful and desirable migration involves two processes, one physical and one largely psychological. The physical aspect is that of transport and organization. If it is hoped that India's problem may be met by draining off the annual population increase in planned migration, that hope is set too high. India's net increase daily totals fifteen thousand. Sufficient shipping could scarcely be provided, quite apart from all other considerations. From the psychological aspect, it is evident that no acceptor country will want to receive immigrants at a rate faster than that at which they can be absorbed culturally and politically.

Fortunately, there are in the world a number of great countries which have huge exportable surpluses of food and other biolog-

ical materials, so that in recent times, despite the real and unreal problems set by transport and finance, major famines have been infrequent. Chief among these producers of surpluses are the Dominions of the British Commonwealth, the U.S.A., and Argentina.

We must then, at this stage in our consideration, conclude that if we are successful in our plans for bettering the lot of the individual, and probably even if we are not, the population of the world will increase substantially in the next few decades and probably generations. Equally we must conclude that during this period we have to increase the availability of food and other organic materials in much greater proportion. Is this increase in fact possible, are we capable of achieving it, and are our present efforts yielding results at the rate required to meet increasing need? It has already been stated that some factors in the environment are helpful and some the reverse. Here too, relative rates of action are of great importance. Let us first consider some of those factors or trends which appear to help towards important increases in the production of organic matter for man's use.

There are certain areas of the world where the land is properly cultivable, but in fact is not cultivated, because there are not enough people available on the spot to do the job. The Amazon basin, parts of Burma, New Guinea, and Sumatra are examples. The migration of agricultural labor would be advantageous if total production were the sole criterion. But the need for immigrants, to permit the maximum development of an area, frequently exceeds their acceptability and the rate of psychological and political absorption. Even so, important contributions in organic supplies may yet be made by what remains of the world's pioneer areas. Additional areas may be brought into agricultural production by means of new irrigation systems and by the extension of old ones. The Nile system affords the most widely known example. Already for some months each year no Nile water enters the sea direct. The sea receives only the water pumped from the main drains after passage through the soil of the irrigated lands. India's problem in particular has been stressed, so it

should be realized that the irrigated area of India, some 70 million acres, is already more than three times the irrigated area of the U.S.A. (the second on the list of countries with irrigation), and is more than the combined total of the ten countries with most irrigation after India. Yet presumably, the greater the dependence on irrigation, the greater the danger in times of periodic or abnormal drought. India now has still further great plans and projects for irrigation which will pay their dividend in increased supplies of organic matter.

Another way in which the crop-bearing lands of the world may be increased is illustrated by the northward push of the wheat-belt in Eurasia and North America during the last fifty years. This has been made possible by the use of faster growing and earlier ripening varieties of wheat, obtained by selection and the process of vernalization of the seed grain. There is still much to be done all over the world in the advancement of agricultural technique, animal husbandry, and pest control. Great advances have been made, and can continue to be made, in the actual productive efficiency of the living organisms which are our means of subsistence. But the distribution of these improvements over the world is extremely uneven. There is far to go before we can reap the full benefits, even of the improvements already known to us.

Similarly, there are great strides to be made in the development of fisheries, and considerable efforts are being made to that end, both in the fresh waters and in the sea. Fisheries have the advantage that we can reap where we have not sown, and we can reap in the open, little hampered by the habits and habitations of men. With few exceptions, however, the fisheries of the world are limited so far to the shallow waters overlying the continental shelves, and include only those fish which live on the bottom and near the surface. The main mass of the waters of the world, the great ocean areas, have not yet been called upon to yield a harvest. In this connection too, it is to be remembered that the oceans contain extremely large quantities of organic matter, minutely dispersed in the bodies of small organisms.

Some day we may find it desirable and feasible to draw direct upon this supply; but of this we are not yet technically capable. So far we have used the fishes and the whales as our collecting apparatus.

Let us now look on the other side of the picture, at those factors and trends which are unhelpful.

Stockdale, speaking in particular of the West Indies, has pointed out: "Most people in moist, hot tropical climates do not want to work very energetically for long hours: they seem to prefer to be satisfied with a lower standard of living and more leisure and they would, it appears, rather take life easily than add to their material comforts. This is an outlook which no one has a right to condemn, but it carries with it the corollary that the standard of living of most workers in such areas cannot be expected to rise enough to be comparable with western standards."³ That is a point which is too often overlooked.

Processes of land degradation are now world-wide in their distribution, but vary greatly in cause and local importance. Local decreasing fertility and crop yields are often early symptoms of that disease which may develop into gross land degradation. Such degradation and erosion is now recognized as being ancient in local but recent in widespread incidence. The immediate agencies of erosion are wind and water, following removal or damage to the preexisting plant cover. The causes of this damage are usually associated with improper exploitation in grazing, plowing, firing, felling, or the collection of domestic fuel. This improper or too violent exploitation is itself the result of pressures, financial, biological, or otherwise.

In the United Kingdom a gentle and tolerant climate, together with the peculiar consistency of most of the soils, allows practices which elsewhere in the world would rapidly lead to extensive erosion. The steepness of slope which can be safely plowed is one example. There are now few countries of the world where land degradation, in one form or another, is not

³ Sir Frank Stockdale, *Development and Welfare in the West Indies, 1943-44*, p. 1 (Colonial No. 189, 1945, p. 12, para. 61).

of major importance. The most vigorous and successful counter-measures have been taken in the U.S.A., the land of pioneers both in spoliation and in eventual costly cure.

A large proportion of the forest lands of the world is still being overcut, the yearly fell exceeding the annual increment of woody substance. Frequently forest is so used that it at once ceases to be forest, both regeneration and replanting being almost absent. The land is then often rapidly degraded and produces nothing of value. These remarks are particularly true of the coniferous soft-wood forests of the northern hemisphere, which at present supply the bulk of our immense requirements of timber and pulp.

Likewise, a large proportion of the most important fisheries in the world, particularly the trawl fisheries of northwest Europe, have been overfished. The whale fisheries of the world, and the seal fisheries, have similarly provided some of the worst examples of wasteful, irrational exploitation. In just the same way many areas of the world are at present being overgrazed. The grazing and browsing herds of domestic animals are consuming more than the annual crop of new vegetation. Conservatism and the continued use of obsolete varieties, techniques, or customs also account for a less than rational production from many areas of cultivated land. Unnecessarily low yields are also frequently to be attributed to unsatisfactory systems of land tenure. Excessive fragmentation, sharing, frequent redistribution of village lands, strip cultivation up and down the slope, and other anachronisms are common examples. All of them are a particular hindrance to the planting of trees and any form of conservation cultivation.

These then are the facts. Particular areas of the world, and the world as a whole, have populations which are rapidly increasing, a process which is likely to go on for several generations. The people have to be supplied with organic materials which can only be supplied by the cropping of living plants and animals. The amount properly needed by each individual is much more than, on the average, has ever been available so far: the

deficiency is measured in misery. There are certain processes at work which are favorable to increased availability for the individual, and there are other processes and circumstances which are unfavorable. Many believe that service to others is a constant duty, and that therefore we should press forward in our efforts to provide health and adequacy for every individual. The question is whether adequacy is possible now and in the future, and whether we are acting with vigor enough to attain it.

But the rapid development of biological production involves two chief processes: one the knowledge of what should be done, the other the doing of it. At present, in most areas, knowledge is far ahead of practice. Practice, consequently production, is very largely dependent on the actions of a great diversity of individuals all over the world who have in common one particular attribute: conservatism. Education and demonstration are the standard and the desirable methods of overcoming conservatism and so leading on to improved techniques and larger production. Fortunately education and its results are accelerative and accumulative. But it may well be, when quantitative assessment of the factors has been carried out, that instances will occur in which the results of education are demonstrably insufficient. If this is so, if education and demonstration are insufficient, it may, however regrettably, be necessary for a time to resort to coercion. An unpleasant doctrine, indeed; yet what is the alternative? The quantitative data, relating to numbers, needs, and the environmental factors involved in production, must be obtained and action taken in accordance with the results.

In conclusion, this is the plea in this matter of population trends relative to the world shortage of biological resources: Let there be appreciation that the background is dynamic, that the relative rates of the factors are of immense importance, and that eventually active and voluntary adjustment of populations will be as inevitable as it is already desirable. In our attempts to make supplies match needs more adequately than now, let policies be based on real assessment of quantitative data rather than on half-

knowledge and guesswork. Let there be appreciation that these matters are desperately urgent.*

* The study of demographic developments, while by no means limited to the domain of geography, must be regarded as an important part of human geography. It is also a much neglected one. We tried to stress its importance in Chapter 6 ("The Shifting Balance of Man Power") of the earlier *Compass of the World*. Cf. also the articles on population trends in this book by Frank Lorimer, Warren S. Thompson, Irene B. Taeuber, and J. Russell Smith. A comparison of the conclusions of these authors with those of G. C. L. Bertram shows clearly the secular importance of demography in its relation to Earth and Man.—THE EDITORS.

21

POPULATION CHANGES IN SOUTH AND EAST ASIA

By WARREN S. THOMPSON

The more students of population learn about the processes of population change in the past and among the industrially retarded peoples of today, the more respect they have for the observations made by Malthus and the conclusions he drew from them at the close of the eighteenth century. That he did not then foresee the decline in the birth rate which was to follow upon the development of the nonagricultural industries in cities is not surprising in the light of the small amount of information available to him regarding contraception as a method of controlling population growth. Even up to the time of his death (1834) there was very little reason to believe that contraception would become an important method of controlling population growth.

The truth Malthus was trying to drive home during much of his life was that, under the economic and social conditions prevailing in his day, population tended to press against the means of subsistence so heavily that its growth was actually determined by the severity of this pressure, which was measured by the level of the death rate.

WARREN SIMPSON THOMPSON, born Weeping Water, Nebr. A M., University of Nebraska, 1911; Ph D., Columbia, 1915; Director, Scripps Foundation for Research in Population Problems, Miami University, since 1922. Vice president of the International Union for the Scientific Investigation of Population Problems, former president of the Population Association of America.

Author: *Danger Spots in World Populations*, 1929, *Population Problems*, 1930; *Plenty of People*, 1944; *Population and Peace in the Pacific*, 1946; and other books and papers on demographic problems.

The essential truth of Malthus' doctrine never depended on the acceptance of the famous ratios—a geometric ratio for the growth of population and an arithmetic ratio for the increase of food—but rather on the fact that in the world as it then was the positive checks, hunger, disease, and war, actually did determine population changes. As for the future, I think he was also correct in his belief that the only way to avoid permanently the hardships of the positive checks was to practice the preventive checks—those that would reduce the birth rate.

As I have already said, it does not surprise me that Malthus did not foresee the effectiveness of the preventive checks we are now using in the West, nor that he had little faith in the preventive checks he knew—late marriage and sexual abstinence in marriage. But it is a mistake to believe he did not recognize that when new social and economic conditions came to prevail there might be a temporary relaxation of the pressure of population on the means of subsistence and hence a rapid growth of population. In fact, he called attention again and again to the tremendously rapid growth of population in the United States, where, temporarily, there was an abundance of new land to be brought into use.

In the industrially retarded area of South and East Asia with which we are here concerned, conditions of life are still much like those which Malthus knew, and the growth of population in the region during the last several decades has actually followed much the same pattern that he said it would. The chief control over population growth in all this region is still exercised by the hardships of making a living, by disease which is made more deadly by the hardships, and by war which always leads to an increase in disease and famine. But from the vantage point of our greater knowledge today we can measure more accurately the factors at work modifying the positive checks, and can discern here and there the beginnings of the more effective preventive checks.

Because all reasonably accurate counts of population in this region are of relatively recent date, this discussion will deal

chiefly with conditions in recent decades. In India ¹ the first census was taken in 1872, and it was incomplete both in area covered and in the full enumeration of the people in the area covered. From this census, however, it was possible to say with considerable assurance that the population of all India was about 256 million. The growth from that time to 1941 is shown in the accompanying table, where adjustments have been made to show the whole of India at each date.

POPULATION GROWTH (THOUSANDS) OF INDIA
EXCLUDING BURMA, 1872-1941

YEAR	NUMBER	PER CENT
1941	388,988	15 0
1931	338,171	10 6
1921	305,730	0 9
1911	303,041	6.1
1901	285,610	0 9
1891	282,967	9 5
1881	259,284	1 4
1872	256,378	..

The most interesting point in this table from the demographic standpoint is that until the decade 1931-1941 there were no two consecutive decades in which there was any consistency in the rate of growth. The causes for this wide variation in growth from decade to decade are not far to seek, but they can only be mentioned briefly here. In 1878-1879 there was a great famine accompanied by devastating epidemics which were in great measure the direct consequence of the famine. So great was the loss of life from the catastrophes that it may well be asked whether even the small increase (1.4 per cent) between 1872 and 1881 was not due to the better count of population at the latter date rather than to an actual increase in numbers, in spite of the fact that the census authorities made very careful efforts to allow for such improvement in the data given above. In the decade 1891-1901 the same factors again operated to reduce population

¹ Cf. G. C. L. Bertram, "Population Trends and the World's Biological Resources," *ante*, pp. 310-324

growth to a negligible amount, and in the decade 1911-1921 the influenza epidemic killed probably no fewer than 12 millions and quite possibly twice as many in the course of a few months in 1918.

Following each of these decades when hunger and disease made population growth almost nil was a decade without real famine and with only a normal amount of epidemic disease for India. In these decades there was a significant rate of growth. But it should be pointed out that a normal epidemic loss for India was and is far greater than any we have known in the West for a century or more. Even our influenza losses were negligible by India's standards. India's normal death rate is still about two and one-half to three times as high as that of most Western lands. For the two decades since 1921 India's death rate has probably been between 30 and 35 per 1,000, which is well below its previous normal. As a consequence, population has grown greatly—about 83 millions—although the rate of growth even in 1931-1941 (15.0 per cent) was lower than that of the United States in any decade prior to that of World War I.

On the other hand, there is no evidence whatever in the demographic data of India to indicate any reduction in the birth rate. I do not mean by this that there have been no fluctuations in India's birth rate. Undoubtedly the devastation of the influenza epidemic in 1918 reduced the birth rate for a few years because of the great number of deaths among young adults; but this cannot properly be called a downward trend.

In India three factors may be said to have determined population changes in the last seventy-five years, and they are just those on which Malthus laid chief emphasis:

- a. For a number of decades India has had a stable government which has prevented internal disturbances so that *war* has not much affected her population growth. This stable and relatively efficient government has also made it possible to undertake certain modern developments which have affected the death rate favorably.

b. Famine has been an important factor, indeed the decisive factor at times, in raising India's death rate to a high level and thus reducing population growth. But it should be noted that constant hunger or undernourishment is ever at work weakening the people and making them an easy prey to disease, so that in the long run undernourishment is without doubt a much more deadly factor than actual famine.

c. Disease is the third great determiner of India's death rate. It keeps the death rate two to three times as high in India as in the West. But I do not mean to draw any sharp distinction between deaths caused by hunger and those caused by disease, because both operate actively in most of the country all the time.

Thus, India seems to me to furnish indubitable proof of Malthus' position. When more food became available (for example, because new land was irrigated), when disease became less deadly (for example, when epidemics were somewhat less destructive than usual), or, in recent years, when the public health service became a little more effective or when peace prevailed, population grew, the speed of growth depending on the degree of relaxation of the positive checks. On the other hand, when these checks were severe there was very little growth.

Without doubt there have been many times when India's population actually decreased because of high death rates arising from the action of these factors; and for most of her long history her population must have been almost stationary as compared with the growth of the West since about 1800. Today India is facing the problem of whether she can keep her death rate down to the level of the past two decades with a present population in excess of 400 millions and with no reduction of the birth rate in sight.

Many Indian and foreign students believe that the pressure on the means of subsistence has been so little relieved by the expansion and improvement of agriculture and by the mechanization of industry during the past few decades that the death rate is more likely to rise than to fall—in other words, that the increase of population has almost kept pace with the increase in total pro-

duction. The writer's opinion is that there has been some small relaxation of pressure. Otherwise, he does not see how even the modest decline in the death rate that has actually endured for over twenty years at a stretch could have occurred. It may be, however, that the public health service, inefficient as it is, is chiefly responsible for this decline, and that the actual pressure on the means of subsistence is as great as in 1920 or even greater. In any event, no one can survey the population situation in India without a high degree of uncertainty, not to say pessimism, regarding the future welfare of the people. They have grown in numbers almost, if not altogether, as fast as the means of subsistence have increased, and there seems to be but little prospect that industrialization will proceed fast enough to absorb a large part of the natural increase India will have if her death rate remains at the present level. The Indian people are on the horns of the Malthusian dilemma. I can see no way by which they can avoid the hardships of a higher death rate in the near future.

Space will not allow even such a brief treatment of the population changes in the other political units of South and East Asia as that for India; but it is not necessary, since the general pattern of growth is much the same everywhere although the details differ considerably from country to country.

Java is supposed to have had about 4.5 million people in 1816, when the Dutch regained possession after the Napoleonic Wars. Their real occupation of the island may be said to date from that year. The 1930 population was 40 7 millions, and the 1940 population is estimated at 49 to 50 millions. The 1816 estimate may be considerably in error, but there is no question that for about a century and a quarter the population of Java has increased at a fairly steady and rapid rate. It was probably not less than eight times as large in 1941 as in 1816, and it may have been even more than ten times as great. The factors operating here are essentially the same as in India; but Java has suffered less from famines and epidemics than India, because more new land was available, so that her population growth has undoubtedly been both more steady and more rapid. The establishment of

efficient government, the building of lines of transportation, the construction of irrigation works, the improvement of agricultural practices, and the development of a certain amount of public health work, have kept the death rate below what it was before the Dutch occupation became effective.

The net effect of these improvements is a population growth that for more than twenty years has worried the Dutch authorities. They have developed rather elaborate schemes for sending large numbers of Javanese to the "Outer" islands, the last of which seemed quite likely to succeed, and they have given increased attention to industrialization and to the improvement of agriculture; but, in spite of all, they have increasingly felt that the relaxation of population pressure which has been manifest in the lower death rate for about a century was going to be harder and harder to maintain. Just as in India, every little improvement in food supply and in health service has led to further increase in numbers with very little increase in per capita production. However, Java contains only about 8 per cent of the area of the Netherlands East Indies, and most of the other islands are thinly settled, so that there were no political barriers of any significance to hurdle, before the Japanese invasion, in developing migration of the Javanese on a large scale. Whether emigration can furnish effective relief to the population pressure in Java, under the proposed new political status of the Netherlands East Indies, remains to be seen.

Almost the same story of more efficient government with internal peace, of agricultural improvement, of better transport, of a beginning of machine industry, and of the development of a small measure of health service, could be told of the Philippines. Here we know that the population somewhat more than doubled between 1903 and 1939, and it is supposed to have increased about tenfold since 1800. There is still a considerable amount of thinly settled land in the Philippines but it probably is not equal in quality to that now being tilled. The area of these islands is more than twice that of Java, and their population only one-third as large. However, the rate of increase has been higher in the

Philippines than in Java in recent decades and the gains in well-being already achieved are now in jeopardy in some districts and probably cannot be held unless a large migration to the less developed islands can be quickly organized. Moreover, except for a small class in Manila there is no evidence of a decline in the birth rate, and every improvement in health leads to a larger natural increase. The Philippines, too, are being caught on the horns of the Malthusian dilemma.

French Indo-China, Burma, Siam, and Malaya are going through the same processes of growth, although the details of the process vary from country to country. Everywhere conditions favoring population growth arose from the occupation of these lands by Europeans who were desirous of exploiting their resources. Such exploitation could not be carried out effectively until public order was established. This was the prime prerequisite for all important economic developments in transportation, in plantation agriculture, in mines, in oil wells, in improved agriculture, and in public health service and education. The irony of the situation is that all these essentials for exploitation so increased population and so changed the economic and social attitudes of the natives that further exploitation is becoming more and more difficult and dangerous. Population has grown almost as fast as production has increased, so that the surplus which was the sole object of the exploitation is being progressively endangered.

Studies of the processes of population growth in the West show that the voluntary control of the birth rate develops only as non-agricultural industries develop in cities. On the one hand the colonial areas of South and East Asia were helped to develop conditions which would inevitably result in lower death rates because these conditions were essential for the production of the raw materials wanted by the exploiter. On the other hand, the conditions likely to be effective in reducing birth rates have never been encouraged, and as far as we can see now it will be several decades before any industrial and urban development of sufficient size to reduce the birth rate can take place.

Thus far nothing has been said about China²—deliberately, because in the opinion of the writer, China stands alone in this area as the one country which probably has had little or no increase in population for several generations, except in the newly settled areas to the north (chiefly in Manchuria). It is true that very little is known about China's population growth; but there is enough knowledge about the conditions which have prevailed in China during the last century to make it extremely doubtful that China's population has grown significantly during this time.

In the United States we commonly associate the break-up of stable government in China with the overthrow of the Manchu dynasty in 1911; but actually China has suffered from a large measure of internal turmoil for almost a century. Shortly after 1850 the Taiping Rebellion started in southern China and spread as far as the Yang-tze valley, wreaking destruction and death on a scale that staggers the imagination. It lasted almost fifteen years and is estimated to have cost from 20 to 50 million lives and to have destroyed a large part of the property in many of the larger cities and in many, many thousands of villages. In the vicinity of Nanking, as late as 1930 one could see the ruins of villages destroyed by the Taipings. The size of these earlier villages suggests that the rural population of this area around Nanking was larger in 1850 than in 1930. It is not improbable that this rebellion cost China far more lives than the recent war with Japan.

The Mohammedan Rebellion in the far northwest is commonly supposed to have cost ten million lives and devastated whole provinces. The more recent Boxer Rebellion, in 1898, is better known, but was not nearly so destructive as others which might be cited. The point here is that China has not had a stable government for many decades and, since stability is one of the most essential prerequisites of a lower death rate, it seems reasonable to doubt that China's population has grown comparably to other Asiatic populations which have had more stable governments.

² Cf. J. Russell Smith "Science, the New Machinery, and the Population of Asia," *post*, pp. 354-365.

Partly as the result of this political instability and partly as a result of the extremely thick and tough "cake of custom" in China, the other conditions which have favored population growth elsewhere in South and East Asia have not yet developed to any marked degree there. In China there is not yet any system of transportation which can move food from areas of surplus to areas of deficit comparable to that of India; and there is not even the beginning of a public health service in any of the provinces, to say nothing of the country as a whole. In addition, for centuries there has been no extension of the cultivated area, except in Manchuria and a few small areas in the Northwest. There is, on the other hand, some evidence in the abandoned terraces of certain regions, in the great fanlike masses of detritus found where mountain streams debouch onto the plains, and in abandoned irrigation works, that the tillable area of the country has decreased rather than increased in the last several generations. Besides, the program for crop improvement which has contributed materially to an increase in agricultural production in India has scarcely begun in China. These are facts which no one interested in and informed about China will gainsay; and it is on these facts I base the opinion that there probably has been very little increase in China's population for many decades. This same view is expressed by a Chinese writer, Dr. Ta Chen, in a recent work (*Population in Modern China*, page 4) :

"The data seem to show that Chinese population changes in the past have been cyclical rather than linear and that the cyclical trends may be roughly explained as follows: At the beginning of a new dynasty, when peace and order were maintained, population normally increased by the excess of births over deaths, and cultural development advanced apace through the division of labor. As time went on, the increased and increasing density, coupled with the lack of inventions and improvements in farming technology, gradually intensified the struggle for existence by the masses. Nevertheless, population continued to increase until it reached a saturation point, the apex of the cycle. Then came

pestilence and famine, symptoms of overpopulation, until life became increasingly intolerable and revolution or war broke out. This temporarily relieved the pressure of population and brought a new dynasty into being. Population continued to decrease until it reached the lowest possible level, the bottom of the cycle. Then another cycle began, and the cyclical trends were thus repeated, each lasting several hundred years, the length of time being largely determined by the severity of the population pressure prior to the downfall of the reigning dynasty."

Throughout man's history his numbers have grown when favorable conditions resulted in lower death rates because, with only minor exceptions, his birth rates have always been high. However, until a few decades ago population growth had never been much affected in any large population group by the decline in the birth rate. It has been the conditions determining the death rate which have determined population growth—Malthus' positive checks. Today preventive checks which are quite different from those so denominated by Malthus are coming to play the leading role in population growth in the more highly industrialized countries. But they are not yet effective in the area under consideration and are not likely to become effective there for some time to come.⁸ In so far as our experience in the West and that of Japan can be relied upon as an index of when to expect a decline in the birth rates of other Asiatic countries, I believe it is reasonable to say that it will not occur until close to the end of this century even if they make fairly rapid progress in industrialization and if this is accompanied by rapid urbanization like that in Western countries and in Japan. In addition, even this estimate of time assumes that the spread of voluntary birth control will be faster in this region than in the West. I believe this last assumption is justified because reasonably efficient techniques of contraception are already developed and only need to be propagandized effectively in order to spread their prac-

⁸ Cf. Irene B. Taeuber's article on demographic trends in the Japanese realm, *post*, pp. 338-353.

tice. It took Japan only forty to fifty years after industrialization was started to begin to reduce her birth rate, whereas it took considerably longer in most Western countries. Then, too, we must not disregard the possibility that simpler and more effective methods of contraception than we now possess may be found in the future. But even if this should happen the social organization of these Asiatic lands, their "cakes of custom," will not permit of the overnight adoption of birth control. At best we must look forward to several decades, perhaps four to six, during which death rates will still determine the rates of population growth in South and East Asia. If there is sufficient increase in subsistence (and subsistence need rise very little above the present level to bring about this result), the growth of population in South and East Asia is almost certain to be quite rapid; if there is little increase in subsistence, population will grow slowly or not at all.

In the judgment of the writer, the possible improvement in agriculture and the expansion of modern industry cannot go forward fast enough to sustain an increase in population in most of these areas such as they have had in the last four or five decades. But there will be some increase in numbers, and there will be some agricultural and industrial progress. And here's the rub! These peoples will more and more feel the need for larger resources, and if they are forbidden to use resources which they can readily see are not being used, as has been the case in the past, and as seems to be contemplated in the present actions of the colonial powers, then we may expect violent efforts to gain access to these resources as soon as they feel strong enough to have some chance of success. This is exactly what Japan did; and, though she miscalculated and did not succeed, her effort cost us alone many tens of thousands of lives and has largely determined our national social and economic policies for the next generation or, more probably, the next two or three generations. Why should we suppose that India or China in the year 2000, or sooner, each with a population of half a billion or more and little prospect of improving its level of living without access to larger resources,

will be less ready than Japan to try to take these resources if in the meantime some method of distributing them more fairly is not devised?

Nearly twenty years ago I wrote: "When the question of who is to possess the earth is looked at from a long-time point of view, it is perfectly obvious that people who are no longer 'swarming,' who have low birth rates steadily becoming lower, and who have lost the power of actually taking possession of new lands cannot expect to hold for any great length of time territories which they are not effectively using. It is not wise or reasonable in them to expect to have their claims to excess resources honored by nations which are in dire need of them. It seems inevitable, then, that war must be resorted to for the determination of the right to settle on and to use these unexploited lands if the possessing nations are unwilling to make voluntary concessions."

I believe time has shown that the population changes envisaged at that time have gone forward much as expected, and that the problems they were creating then are even more urgent today and will be still more so tomorrow, as other nations begin to grow and to acquire a larger industrial base for their demand for larger resources. Whether we are sufficiently aware yet that we live in "one world," and that the population problems of South and East Asia are world problems, only the future can tell. It is still my firm conviction that we can ignore the population problems of South and East Asia only at great peril to our children and our children's children. One unfortunate thing is that these basic population changes do not present problems which demand immediate action, and are therefore crowded out of consideration by more urgent matters which are in the long run of far less import for human welfare.⁴

⁴ It is suggested that the reader compare these conclusions on a vital subject of human geography with those of G. C. L. Bertram (based on trends within the British Commonwealth of Nations), *ante*, pp 310-324, Irene B. Taeuber (Japan, the former Japanese Empire, and Manchuria), and J. Russell Smith ("Science, the New Machinery, and the Population of Asia"), *post*, pp 338-353 and 354-365.—THE EDITORS

22

DEMOGRAPHIC IMPERATIVES FOR THE PEACE IN THE FORMER JAPANESE EMPIRE *

By IRENE B. TAEUBER

Nowhere was the relationship between population growth, industrialization, and the aggressiveness that leads to war more apparent than in prewar Japan—and in few regions of the world is population so preeminent a hazard to the maintenance of the peace in the coming decades. In 1870 Japan, a backward agrarian state with perhaps thirty-five million inhabitants, appeared destined to colonial or semicolonial status in a vast area where Western imperialism was omnipotent. The leaders of the early Meiji period saw, however, that there was power in science, technology, and industry; so they assiduously studied the cultures of the West in order to integrate their material achievements within

* The writer acknowledges her heavy indebtedness to Frank W. Notestein and the members of the staff of the Office of Population Research, and to Edwin G. Beal, Jr., Division of Orientalia, Library of Congress, without whose continuing cooperation the studies of neither Japan Proper nor the former Empire would have been possible

IRENE B. TAEUBER, born Meadville, Mo. A.B., University of Missouri, 1927, M.A., Northwestern University, 1928, Ph.D., University of Minnesota, 1931. Research Associate, Office of Population Research, Princeton University, Coeditor, *Population Index*, Consultant, Office of the Coordinator of International Statistics, Bureau of the Census; Member, Manpower Panel, Research and Development Board.

Publications *General Censuses and Vital Statistics in the Americas*, Library of Congress and Bureau of the Census, 1943, *The Future Population of Europe and the Soviet Union* (with others), League of Nations, 1944; numerous contributions on population and related subjects to scientific periodicals.

the oligarchic feudalism of Japan. Economic and political expansion proceeded together, until in 1940 an industrialized and urbanized Japan controlled Korea, Formosa, Kwantung, Kara-

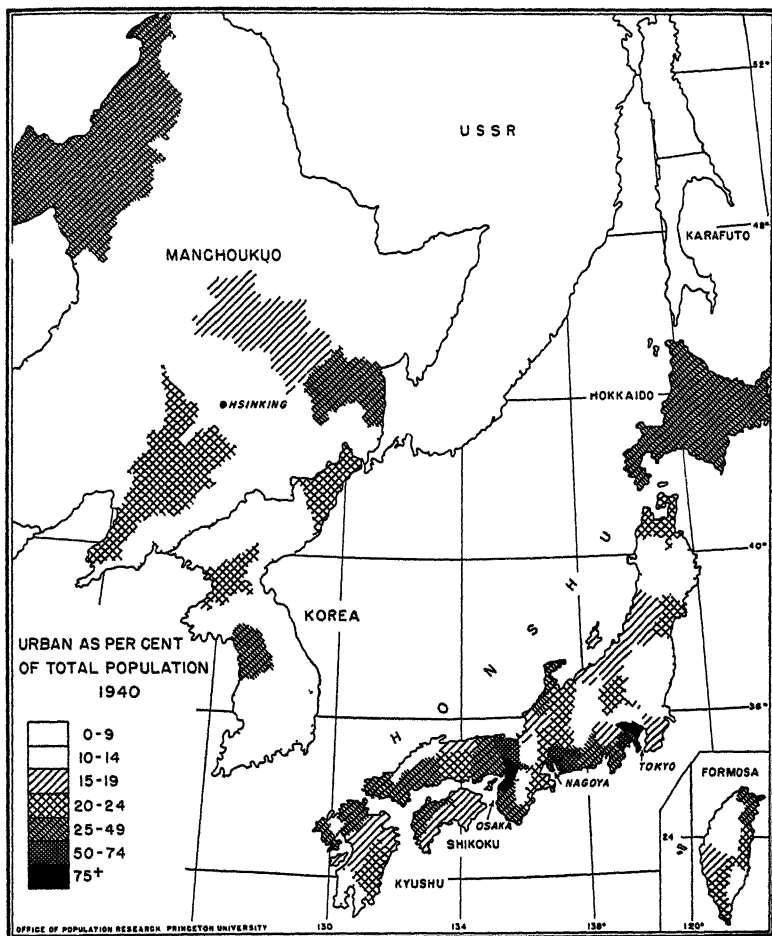


Fig. 25. The Japanese people in 1940, showing urban concentration.

futo, and the South Sea Mandated Islands directly and exercised a not too indirect suzerainty over the puppet state of Manchukuo. But the demographic costs of past wars with China and Russia had been slight, the economic and political gains great, so that

Japan gambled all she had achieved in the seventy-five years of her modern history on a great war to achieve the dream of Asia's conquerors from time immemorial, the economic and political

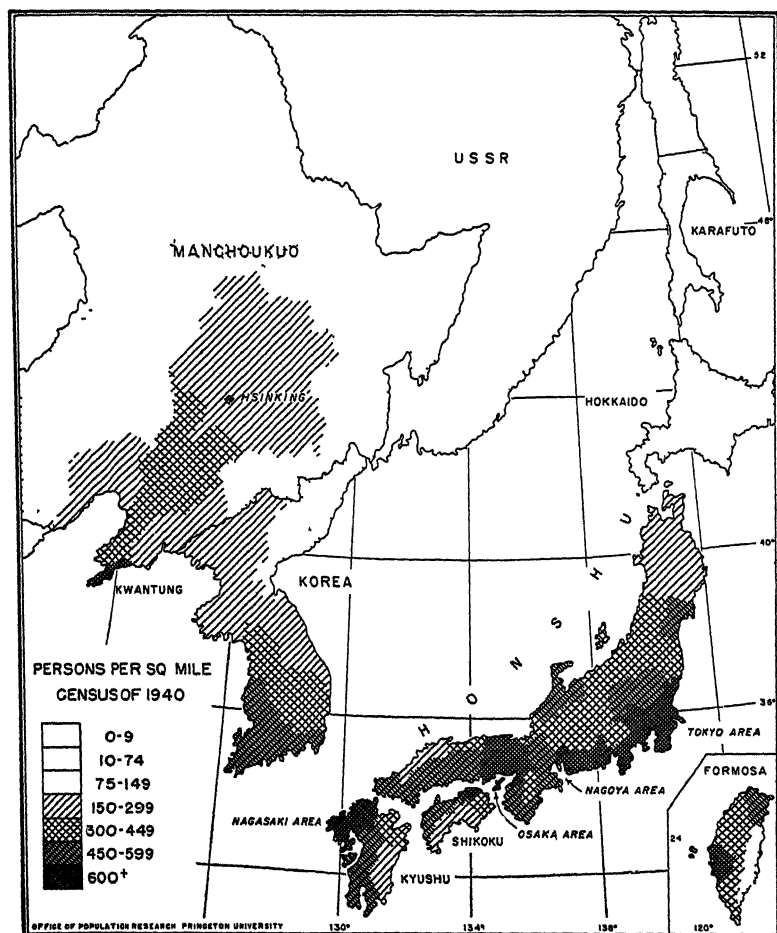


Fig. 26. The general distribution of the Japanese people in 1940.

hegemony of the multitudinous peoples of eastern Asia and the islands of the Pacific. Today the Empire is liquidated, its people thrust back within the home islands, their industries wrecked, their cities in ruins, their capital either gone with the Empire or

disappearing in inflation. The conqueror's tread now echoes in the land that defied even the armadas of Kublai Khan.

The role of population growth in the expansion of imperial Japan is controversial. Perhaps rapid population increase in the already densely populated home islands was a direct stimulant to the series of aggressive wars that led eventually to Pearl Harbor and defeat; perhaps population pressure was simply a convenient rationalization for imperialistic goals. Whatever the students of psychology and politics may decide as to the derivation of the complex forces that motivated Japan's leaders, the demographic heritage of the Empire to the present and the future of northeastern Asia is hard and indisputable reality. (Figs. 25 and 26.) Today more than 145 million people live in an area that only three-quarters of a century ago included perhaps 60 millions. To reverse the process of industrialization and urbanization that was occurring throughout the Empire and re-create agrarian economies would be to insure demographic catastrophe; to facilitate the maintenance of increasing employment and increasing levels of living within industrializing economies would be to insure the maintenance for many decades of that rate of population increase which was such a crucial correlate of political expansionism. This, the dilemma of a defeated Japan, is also the problem of Korea, Formosa, and Manchuria. On its resolution may depend the destiny not alone of the former Japanese Empire, but of all eastern Asia.

URBANIZATION OF THE EMPIRE¹

The Japan of 1868 was basically similar in its subsistence agrarian economy to the other great rice cultures of southern and

¹ The analysis of the structure and dynamics of population in the former Japanese Empire is based on the official statistics of the various areas. For detailed citations to the sources for Japan proper, see Irene B. Taeuber and Edwin G. Beal, Jr., "Guide to the Official Demographic Statistics of Japan Part I, Japan Proper, 1868-1945," *Population Index*, Vol. XII, No. 4 (Oct., 1946), Supplement. Summary citations to the sources for the parts of the Empire may be found as follows. Formosa, *Population Index*, Vol. X, pp. 156-157 (July, 1944); Korea, *ibid.*, pp. 241-242 (Oct., 1944); Manchuria, Kwantung, and the South Manchurian Railway Zone, *ibid.*, Vol. XI, pp. 272-274 (Oct., 1945), Karafuto, *ibid.*, Vol. XII, p. 13 (Jan., 1946).

eastern Asia. Four of each five persons were directly dependent on agriculture, only one in twenty lived in a city of 50,000 or more. The percentage of the gainfully occupied population in agriculture declined from 77 in 1872 to 47 in 1930, but the number of persons gainfully occupied in agriculture remained relatively stationary from the registration count of 1872 through the census counts of 1920 and 1930 and declined in 1940. The entire natural increase of the high-fertility rural areas was absorbed in urban areas, either directly through migration or indirectly through the growth and incorporation of previously rural areas.²

The trend toward industrialization of the economy and urbanization of the population structure was most clearly reflected in the growth of cities of 100,000 and more. These cities contained 12.1 per cent of the total population in 1920, 14.6 per cent in 1925, 17.8 in 1930, 25.3 in 1935, and 29.1 in 1940. The relative growth between 1920 and 1935 was practically as great as that which occurred in the United States between 1900 and 1940.

A fundamentally similar but delayed process of industrialization and urbanization was occurring in the Empire, especially during the armament decade of the thirties and the war period of the early forties. Japan's original goal in Formosa had been the development of an agricultural colony. The Chinese inhabitants of the island were to be the labor force of a commercial agriculture that would assist in eliminating the dependence of Japan on foreign sources and contribute to her foreign exchange. The rational exploitation of the agricultural possibilities of the island was necessarily accompanied by the development of public sanitation, compulsory vaccination, malaria control, and other public health measures. The inevitable result was a decline in the death rate without any appreciable change in the birth rate. Population growth was rapid, amounting to 93 per cent in the thirty-five years between 1905 and 1940. This rapid increase created a high

² Within the country, just as in the United States, there were wide regional differences, with increases in the poor and backward prefectures of northeast Japan, depopulation around one large metropolitan center and in the more advanced and prosperous agricultural areas of the southwest.

density of settlement on cultivated land, with an ever mounting pressure on employment opportunities, whether within or outside agriculture. Between 1905 and 1930 the population without employment increased 70 per cent; the occupied population, 28 per cent. The transformation of the economy was in process even in this early period, however, for industrial employment was increasing more rapidly than either agricultural employment or total population. Those engaged in agriculture increased 22 per cent in the twenty-five years between 1905 and 1930, those in industry 90 per cent.

Urbanization was the outstanding characteristic of the demography of Formosa in the thirties and early forties. The population in incorporated cities increased from 846,000 in 1935 (16 per cent of the total) to 1,137,000 in 1940 (19 per cent of the total). This movement to the cities produced a significant decline in the rate of increase of the rural areas. The population living in incorporated cities increased 34 per cent between 1935 and 1940; that living outside such cities only 8 per cent. Urbanization lessened appreciably but did not eliminate the necessity for expansion of employment opportunities in agriculture and other rural occupations. The total intercensal increase was 660,000; cities absorbed 44 per cent; rural areas, 56 per cent.

The processes of economic and demographic transformation in Korea were similar to those in Formosa except that the numbers involved were larger, the poverty deeper, the pressures to migrate and the opportunities for migration greater. The urban population of Korea rose from 850,000 in 1925 (4 per cent of the total) to 1.6 million in 1935 (7 per cent of the total). Less than one-fifth of the natural increase of over four million was absorbed in this urban growth. The rural population increased 2.6 million, or 14 per cent, within a single decade.

The urban and industrial transformation of Korea was intensified by the war-induced industrial and military activities of the Japanese. By 1940 the urban population had increased to 2.8 million, 12 per cent of the total. In the decade before 1935 three-fourths of the total population increase had been absorbed in the

rural areas, less than a fourth in the towns and cities. Between 1935 and 1940 towns and cities absorbed 85 per cent of the intercensal increase; rural areas, only 15 per cent. Even this urbanization does not measure the extent of the flight from the land in Korea, for there was an accelerating out-migration to Japan and Manchukuo amounting to between 1.5 and 2 million people in the fifteen-year period from 1925 to 1940.

The political and economic transformations associated with imperial expansion were the dynamic factors that made Manchuria one of the great new settlement areas of the first half of the twentieth century. Although they resulted in the temporary elimination of Chinese sovereignty, they initiated a mass migration of Chinese labor that made Manchuria ethnically Chinese. There are few statistics to indicate the approximate magnitude of this movement prior to 1923, but the total recorded migration between 1925 and the end of the first quarter of 1943 amounted to 14 million, the net gain by migration to 5 million. These figures on Chinese migration are generally recognized as gross understatements. But it was not alone Chinese who came to Manchuria. Korea's agricultural overpopulation and periodic agricultural calamities provided a strong propulsive force to expansion across the border. Japanese came as bureaucrats, technicians, and administrative or supervisory personnel, first within the orbit of Kwantung and the South Manchuria Railway Zone, later throughout Manchukuo. The rationalization for Japanese interest in Manchuria had been the familiar pattern of the need for agricultural settlement to relieve the overpopulation of the home country; the real Japanese movement was to the cities and to urban occupations. It had as its motivation and its consequence the control of the economy of Manchukuo in the interests of Japanese profits and Japanese military strategy.

The phenomenal growth of cities in Kwantung and Manchukuo is the most reliable measure available of the economic transformations in process during the decade of agricultural and industrial expansion and military preparedness that preceded Japan's war for continental hegemony. In 1940, the 4.4 million persons resi-

dent in cities of 100,000 and over constituted 10 per cent of the total population of Manchukuo. Although the urban-rural patterns of settlement were still those of a predominantly agricultural population, the rapidity of urban growth in the brief history of the puppet state has few parallels in the history of either East or West. The fifteen cities of 100,000 and over in 1940 had increased 90 per cent in total population since December 31, 1936. Fragmentary estimates for the period after 1940 indicate that rapid growth continued throughout the war period until the approach of the defeat of the Japanese in 1944 and 1945.

PROSPECTS AND ACTUALITIES, 1940-1945³

This urban and industrial culture that was developing within the Orient was not greatly advanced even in 1940 if compared to Northwestern and Central Europe or the northeastern region of the United States; but if the focus is shifted to the status of the areas themselves at the beginning of the twentieth century or to the teeming cultures of the other rice areas of Monsoon Asia, the transformation was extraordinary. Mortality remained high if compared to the West, but the expectation of life at birth in Japan Proper was some twenty years longer than in China or in India. Among the peoples of the Empire it was approximately ten years less than among the Japanese, but probably ten years more than

³ The documentation for the war period, though still incomplete, is voluminous. Microfilm copies of tables compiled from the data sheets of the censuses of 1940, 1944, and 1945 are available in the Library of Congress. Published volumes of vital statistics are available through 1942, microfilms of summary tabulations through 1943. Summary reports and analyses of the censuses of 1946 and 1947 were issued in Tokyo by the Research and Statistics Division of the Economic and Scientific Section of GHQ, SCAP. Detailed tabulations of local area statistics are included in both the Japanese and the English language editions of the official gazette. Current data are published in the *Summation of Non-military Activities in Japan*, GHQ, SCAP, and the *Summation of United States Army Military Government Activities in Korea*, U. S. Army Forces, Pacific, Commander-in-Chief. Massive materials on the war period are contained in the reports of the U. S. Strategic Bombing Survey. There is no statistical information for Formosa and Manchuria after 1940 other than the general estimates issued by the Directorate of Statistics, National Government of China. See *Statistical Abstract of the Republic of China, 1947*, Table 2.

it had been among the peoples themselves in the mid-nineteenth century. Population growth had been rapid throughout the Empire, but there was accumulating evidence that, in the East as in the West, the accelerated rate of increase that accompanied modernization was transitory. The familial and reproductive mores of the Japanese had yielded before the pressures and the stimuli of nonagricultural employment, urban life, education, increasing knowledge and increasing wants, just as had those of the West in an earlier period. The gross reproduction rate of Japan Proper, which approached 3.0 in 1868, declined to 2.7 in 1920, 2.1 in 1940. And, just as in the West, birth rates were lower in urban than in rural areas and, within urban areas, were lower among the professional groups and the economic élite than among the laborers and the poor. The same process of decline was operative among the native peoples of the Empire; but the established urban groups and the educated economic élite were so small in relation to the peasant masses that total fertility remained relatively unchanging at the high levels apparently characteristic of all the peoples of Asia's Pacific littoral.

Impartial economic assessment of the demographic problems and possibilities of the Japanese Empire in the late prewar period led to quite pessimistic conclusions. The dynamism of the industrialization was primarily military and strategic, only incidentally economic. The utilization of resources of the Empire and Manchukuo was oriented toward the needs of Japan rather than the welfare of the native peoples. Finance, ownership, entrepreneurial and administrative staff, profits—all these were Japanese. The Formosans, the Koreans, and the Manchurians were the peasants who tilled the fields, the workers who toiled in the factories. Food and income, inadequate in Japan, were tragically low for the native peoples of the Empire. Efficient organization and modern knowledge—both Japanese—had cut death rates in Japan Proper and the Empire far below the levels to be expected on the basis of the economic and social characteristics of the people and the limited diets available to them; but the maintenance of economic backwardness within a culturally insulated milieu had reduced

compensatory declines in fertility to a minimum. Natural increase among peoples of the Empire was between 2 and 3 per cent a year. It was obvious that rates of increase such as these could not be maintained indefinitely. During the last decade of the Empire the maturing youth of the countryside were absorbed into the developing industries of the cities, but even before the war the indefinite continuation of this accelerated industrialization appeared highly improbable.

Rates of population increase were slowing within Japan Proper, but careful examination of the prewar population indicated that population growth would continue for perhaps half a century more, and that, economic conditions permitting, the maximum population would approach or surpass 100 million. To the Japan of 1940, with the vision of continental hegemony, slowing growth was a matter not for optimism but for acute concern. Official estimates of future population, prepared by the Institute for Population Research for the Planning Board of the Cabinet, indicated that continuation of the levels of fertility and mortality as of 1935-1937 would not produce the desired population of 100 million by 1960, that continued declines in vital rates of the order of magnitude that had been occurring in the twenties and thirties would result in a maximum population of only 123 millions in the home islands by the year 2000. Hence a comprehensive population policy was adopted, not to hasten the period of equilibrium in this overcrowded land, but to insure a population sufficient for the overlordship of the East.

If the Japanese had won the permanent domination of the Greater East Asia Co-Prosperity Sphere, with an industrial heartland in Japan Proper and Manchuria, a raw-material and agricultural hinterland in China, Southeast Asia, and the rich islands of Indonesia, then indeed Japan might eventually have become the England of the Far East, with man power inadequate for the tasks of Empire. But that dream was shattered, and the population problems of Japan, Formosa, Korea, and Manchuria, far from being solved, are immensely more acute than they were during the last years of Empire.

Although the human balance sheet of the war years is as yet conjectural, it is quite apparent that the predicted gruesome "solution" of Japan's problems of excess population through war did not occur, except possibly for the Ryukus. Natural increase, the difference between births and civilian deaths, remained at over one million a year through 1941, 1942, and 1943. Full employment, relative prosperity, and the élan of apparent victory were probably more fundamental than population policy and propagandistic injunctions in maintaining the birth rate at high levels throughout 1943, despite the absence of increasing numbers of men in the armed forces, the continued migration from the countryside to the war centers, and the absorption of young women into the labor force. There was deterioration in civilian health, but any excess mortality of adults was more than compensated by a sharp reduction in infant mortality that reduced the national rate to 88 for the births of 1942.

In 1944 the debacle came, with accelerating air bombardment, mass flights from the cities, and mounting casualties. The statistical system that might have measured the crescendo of catastrophe was itself a casualty, for no reporting could occur from isolated or badly devastated areas. The hiatus was brief, however, for enumerations of the population of Japan Proper (excluding Karafuto, Okinawa, and certain other areas not subject to the government of Japan) were taken on November 1, 1945, April 26, 1946, and October 1, 1947. These censuses, despite their admitted limitations, are documents of extraordinary value for the analysis of both the areal dispersal of people that resulted from bombardment and the net demographic impact of the war on the Japanese people and the population of Japan.

The urban population, which had increased 5 per cent between October 1, 1940, and February 22, 1944, had decreased almost one-third by November 1, 1945. Osaka and Hiroshima had lost over three-fifths of their 1944 populations, while losses of over 50 per cent had occurred in Kobe, Tokyo, Nagoya, Kure, Mitachi, Fukui, Kawasaki, and Kagoshima. Places classified as urban in 1945 had a population of 30.1 million in 1940, 30.3 million in

1944, but only 20 million in 1945 and 22.2 million in 1946. The pressure of the people to return to their former places of residence in the cities has been so great, however, that the government has had to forbid the movement except for selected categories of workers.

The excess of deaths and the deficit of births that together constitute the human costs of war are subject only to conjecture. Official statistics on both battle dead and deaths of members of the armed forces differ widely, while the national vital statistics registration system collapsed during 1944, not to be reconstructed until July 1, 1946. Comparisons of the survivors of the births of various years as enumerated in these censuses indicate that numbers of births probably remained at the 1941-1943 level in 1944, but declined approximately 20 per cent in 1945 and the early months of 1946. However, the number of children under five on April 26, 1946, in the area then subject to the government of Japan was only slightly below the number expected in all Japan (including Okinawa but excluding Karafuto) on the basis of either Japanese or Western projections of the prewar populations. Furthermore, the birth registration statistics for recent months indicate a postwar boom in babies comparable to that which is occurring in the advanced industrial countries of the West.

THE LIQUIDATION OF THE EMPIRE

The various parts of the Japanese Empire have been considered separately in so far as their economic and demographic developments are concerned. In one sense, this is a valid procedure, for the seventy-five-year expansion of imperial Japan was an interlude in Asia's history. Formosa and Manchuria are again Chinese, Karafuto is Russian, and Korea, promised independence, remains tragically divided. The liquidation of empire is a complex procedure, for demographic and economic interrelationships are intricate. In 1940, there were 3.6 million Japanese outside Japan Proper, 1.3 million Empire nationals within Japan Proper. At the end of the war, there were 6.6 million Japanese to be

repatriated to Japan Proper, while 1.2 million aliens, including nationals of the former Empire, were to be repatriated from Japan. The movements proceeded rapidly; by April 28, 1946, some 2.6 million Japanese had been returned to Japan, while 949,000 aliens had left Japan. By April, 1948, 5.8 million ex-servicemen and civilians had moved into Japan, while 1.2 million persons had left Japan. Some 321,000 Japanese had been repatriated from north Korea, 218,000 from the Port Arthur and Dairen region, and 1 million from the remainder of Manchuria. But almost three years after the end of the war 765,000 Japanese still awaited repatriation—494,000 of them from Siberia, 198,000 from the Kuriles and Sakhalin.⁴

THE FUTURE

The demographic costs of the war to the Japanese people and to Japan were substantial, although they are difficult to measure. The census of April 26, 1946, indicated a total population of 73.1 million (34.9 male, 38.2 female). If we add the 3.8 million Japanese still outside Japan, the official estimate of 300,000 omissions, and the 600,000 excluded Koreans, we secure a total population of 77.8 million in early 1946. This figure is appreciably below the 80.4 million Japanese who should have been alive and in the repatriation area on April 26, 1946, if there had been no war, but it is far above the 71 million Japanese who lived on October 1, 1940, within the area that was the Japan of 1946. The natural processes of birth and death did not stop with the census of 1946, however. Indeed, births increased rapidly in the pattern now familiar to students of postwar vital rates in the West. Between April, 1946, and February, 1948, births exceeded deaths by 2.3 million.⁵

Clearly the war did not lessen the population problem of Japan. The majority of the prewar projections of the population

⁴ Supreme Commander for the Allied Powers, *Summation of Non-military Activities in Japan*, No. 29, Feb., 1948, p. 282

⁵ Japan's population amounted to 78.6 million on Oct. 1, 1947, and to 79.3 million on Feb. 16, 1948.

indicated a total population somewhere between 88 and 95 million by 1960. Current estimates place the 1952 population at 83 million. Analysis of the 1946 census figures indicates that even in the absence of further repatriation the population in labor force ages (roughly ages 19 to 69 in Japan) will increase 6 million within a decade. Whether the estimated future populations can exist, whether indeed even the people now in Japan can continue to exist, depends on the economic developments within Japan and the northeastern Asiatic region as a whole. Only an industrial development more substantial than that which existed before the war can provide the physical basis of subsistence for these increasing numbers. The reversal of the industrialization and urbanization process, the return to the Japan of 1868 or even of 1930, would necessitate a new demographic-economic balance that could be created only through death.

There are also inescapable demographic imperatives for any peace in Korea, Formosa, or Manchuria which is to offer reasonable possibilities for the improvement of living conditions within the areas themselves and contribute to the development of the northeastern Asian region. The maintenance of order, the extension of cultivation, the improvement of yields, the increase in the export trade, the elimination of plague and famine, and the general health and sanitation programs in all these areas were planned and administered by the Japanese in the interests of Japanese profits and Japanese power. The redundant peoples who were the generally acquiescent labor force in all Japanese enterprises were the beneficiaries of Japanese overlordship in the sense that famine and great epidemic diseases were largely eliminated and general mortality was reduced somewhat, especially for children. But this partial diffusion of Western technology by way of Japan left relatively untouched the folkways of early marriage and abundant childbearing that had been essential to individual and group survival prior to the modern period. With birth rates above 45 per 1,000 total population and death rates somewhat lower than those of India or of Egypt, the native peoples of the Empire were increasing 75 to 100 per cent per generation. If in

the postwar period the potential economic productivity of these areas is utilized to improve the levels of living and the general educational status of the native peoples, drastic declines in mortality will result and the rate of population increase may accelerate. But these increases will be temporary, for the decline of fertility which accompanies a locally oriented program of economic and social development will probably be rapid.

Any group of resources specialists, economists, and demographers could evolve theoretical solutions to the problems of population pressure now existing within Formosa, Korea, or Manchuria which would at the same time provide employment for an increasing labor force during a transitional period of growth. The fundamental problems, in the first instance, are political; in the second, social and educational; in the third, financial. There are no inherent economic or demographic barriers which cannot be surmounted by the scientific and technical knowledge which now exists if the political and social difficulties can be resolved.

The future of all the East is involved in the economic and political fate of the Japanese people and the peoples who were their subjects. Manchuria's resources, agricultural surpluses, industrial plant, transportation systems, and skilled and semiskilled labor supply are essential to the social and economic transformation of China. A regional industrial development in northeastern Asia which included the Soviet Far East, Japan, Korea, and Manchuria would necessitate drastic revision in popular conceptions of the insolubility of the population problems of China's uncounted millions of peasants. There is a fundamental truth in the Japanese conceptions of the possibilities of the integrated development of eastern Asia—provided it can occur under the aegis of the peoples of the region itself.

High population potential in areas of already overdense population requires expanding economics. There is no middle-of-the-road course for Formosa, Korea, Manchuria, indeed for any of Asia's resurgent colonial peoples. The disintegration of ordered political and economic life would mean death for many people now alive; but the continuation of imposed rule oriented toward

the production of exportable surpluses of food and raw material by peoples dependent on a niggardly subsistence agriculture would have led inevitably to populations so large they could not permanently subsist. Only through a combination of educational and social advancement with agricultural and industrial expansion are there even minimum possibilities for the amelioration of the conditions of living for the people of the East.

2

SCIENCE, THE NEW MACHINERY, AND THE POPULATION OF ASIA

By J. RUSSELL SMITH

THE BIRTH RATE AND THE FAMINE

Those who read this chapter should first read the chapters in this book by Drs. Bertram, Thompson, and Taeuber, because this chapter is in part a discussion of facts there presented.

Those three papers have made it clear that the introduction of science, so far as it has gone in southeastern Asia, could not (certainly did not) begin until European control had established peace and order. Granted these factors and some modest applications of science in the forms of sanitation, preventive medicine, and trade, there was a marked diminution in the death rate. But Western contact did practically nothing to change the birth rate, at least not until large cities arose as in Japan. Then a slight duplication of the recent change in the urban birth rate of Western civilization begins to appear—namely, the *lowered* birth rate of the economically well-to-do sections of metropolitan populations; but the high birth rate of the less well-to-do Japanese urbanites continued. Also the birth rate for the main body of the Japanese population—namely, the peasants—continued high as before.

J. RUSSELL SMITH, born Lincoln, Va. B S, University of Pennsylvania, 1898, Ph D., 1903. Professor of Economic Geography, Columbia University, 1919-1944. President of the Association of American Geographers, 1942

His standard works include the following titles. *Industrial and Commercial Geography*, 1913; *Commerce and Industry*, 1915; *Human Geography*, 1921, 1922; *North America*, 1925.

Perhaps the most startling example of this population increase because of death control without birth control was Dr. Taeuber's report of the results of Japanese control in Formosa; but Java and Korea are equally impressive, to say nothing of India as presented by Drs. Thompson and Bertram.

This situation is not exclusively Asiatic. Years ago the West Indian negro in the wholesome island of Barbados had reached a population density of a thousand per square mile, and distressed parents often ran along the road begging travelers to take one of their children.

The island of Jamaica, also under the orderly control of the British, gives us food for thought but is no cause for cheer to the Caucasian. In the last two generations the percentage of whites has declined, and the negro has increased his percentage and also increased mightily in the numbers remaining on his home island after furnishing many shiploads of emigrants to grow bananas in Central America, dig canal at Panama, lay railroads in Brazil.

In areas where European stocks can survive in tropic America we often find examples of the same tendency. In Puerto Rico the death rate has been cut in half under American control, but the same high birth rate continues with the result that the population of Puerto Rico has doubled in the last forty years and many signs of disaster from overpopulation have appeared. This island occupied a conspicuous place in the New York newspapers in the summer of 1947 because of the claim that 600,000 Puerto Ricans had migrated to the United States, more were steadily coming, and nearly all crowded into metropolitan slums. Their health was reported as bad, and relief rates were high. This large emigration to the United States shows no sign of let-up, nor does the Puerto Rican birth rate.

The United Nations food survey rates Mexico, all of Central America, and parts of South America as being in the undernourished class. A particularly pitiful case is that of El Salvador, where the population is largely of Spanish or mestizo stock, most of whom live on the wholesome uplands. Owing to the rough

topography arable land is scarce in El Salvador, and Mr. Vogt, Conservation Specialist of the Pan American Union, reports that the food supply is down to 1,500 calories per person, and the area for producing food is being steadily reduced through frightful erosion resulting from the continued attempts to grow corn on mountain sides as steep as house roofs—some even steeper and exposed to the awful destruction resulting from tropic downpours on steep slopes, newly tilled.

Other examples might be cited in support of the claim that many parts of the American tropics, like the Far Eastern tropics and China, have a culture in which almost no relation exists between births and the ability of the family to feed the newcomers. Therefore it appears that here also the population must be held down by the checks made famous by Malthus a hundred years ago—the four fates that hover over the geometric progression of organisms—war, famine, pestilence, and preventable disease.

Tropic colonization—or, more exactly, the control of tropic peoples—by Europeans was started primarily to give peace and order so that the native peoples might produce food and raw materials for Europe and North America. The present-day hunger of hundreds of millions of Asiatics attests the partial failure of the venture because the population rapidly increases to the point where there is not enough food even for them. India and Formosa are examples, and the account of China in Dr. Thompson's paper shows that this population situation is not limited to colonies or to the tropics.

Indeed it is not limited to the tropics nor yet to the Far East. It may be said to be almost a world problem in its statistics and certainly a world problem in its results. A recent study by the Population Reference Bureau states that thirty-two European nations excluding the U.S.S.R. are estimated to have gained 11 million people during the war despite casualties and massacres, and will gain another 22 million within the next ten years. Is Europe entering the situation in which the Far East now finds itself? With this birth rate and demoralized world trade, can she ever get out of a food shortage?

SCIENCE AND MACHINERY TO THE RESCUE?

We hear much boasting in the area of Western civilization about the age of science and the wonders that science and machinery make possible.

As to these new powers through science—in the last forty years we have invented or discovered or introduced on a grand scale:

1. The passenger automobile and motor truck.
2. The tractor, and the whole battery of machines that trail along behind it and are swiftly revolutionizing American agriculture.
3. The airplane.
4. The Diesel engine and oil-driven ship.
5. The radio.
6. Radar.
7. The science of genetics.
8. Synthetic fibers.
9. Synthetic rubber.
10. Plastics.
11. Winnings of products from the water of the sea.
12. High-speed steel—the mother of the assembly line and of the real age of machinery.
13. The thinking machine.

The *New York Times* of February 15, 1946, announces a revolution by telling of an erstwhile secret machine built to meet war needs.

“It is the Electronic numerical integrator and calculator, ‘Eniac’ for short. This device computes mathematical problems 1,000 times faster than it has been done before. The Eniac contains 18,000 vacuum tubes, has 500,000 soldered joints, occupies a room 30 by 60 feet, weighs 30 tons, took 30 months to build, required 200,000 man hours of work and cost \$400,000.

“It does not have a single mechanical moving part. It operates by electric impulses. They do the moving with the speed of lightning, or faster. It makes 100,000 electric impulses a second and uses 150 kilowatts of electricity. In two hours it solved a problem that would have occupied 100 men for a year. It multiplied

97,367 by itself 5,000 times in less time that it takes to wink—merely the pushing of a button.

“This thing is to the calculator with his pencil, about the same as the atomic bomb is to the yeoman with his bow and arrow. It will solve a whole host of basic problems.”¹

This machine and others of its breed now building promise to be veritable mothers of science. That’s what mathematics is.

There are many other astonishing devices and powers just around the corner already proving themselves, but not yet on the scale of the above-mentioned thirteen.

It is a stupendous list for one generation to witness.

I want especially to emphasize the great increase in the amount of research that is now going on, and the number of men who are busy as physicists, chemists, engineers, and machinists, evolving new products and new mechanisms. Some of the new agricultural machines are amazing in their effectiveness and the ability to replace the work of ten, twenty, thirty, forty men—men working by the old methods that are still in use in almost all lands of crowded population. Can these machines grow food for the hundreds of millions of Asiatics, Europeans, and tropic denizens, let alone the other hundreds of millions who seem to be in imminent prospect of being born if the food is increased?

For answer let us consider the case of a particular Chinese peasant. In the company of a missionary who knew the locality, I walked into the compound of a farmer on the Great Plain of North China some eighty miles south of Peiping. It was in November, the harvest was in. The farmer had a small collection of soybeans, Indian corn, grain sorghum (kaoliang), cotton, and wheat. There were a few chickens, a mule, and a pig. “What will you have to sell?” I asked.

“Nothing,” he answered. “By the time we have fed ourselves and the mule and a pig for the New Year’s feast, there will be nothing to sell. We will use the bean stalks, the corn stalks, the sorghum stalks, and the straw for fuel to boil the rice pot. Any

¹ J Russell Smith and M. Ogden Phillips, *Industrial and Commercial Geography* (1946), p. 37.

money that we may get will come as wages from a few days' work for people in the town."

Thus the family eked out an almost cashless existence. They gave out their cotton for spinning on shares, and they wove it themselves on the hand loom to make the blue cloth in which the Chinese millions clothe themselves, and from which they also make their shoes. The common shoe of the Chinese peasant is made of layers of cotton rags—the last use of old clothes. It is stiff work for the women to sew enough pieces of old clothes together to make a shoe sole, but it goes far to round out subsistence living based on meager local supply.

The peasant family was typical of the better class. Many with less land had no horse or mule, no work cow, some not even a pig. Of what use would be the American farm tractor to these people? the power disc? the battery of grain drills? the combine? the hay baler? the truck? the 50-horsepower machine that does the work of fifteen men in cutting the corn crop and getting it into the silo?

How can this peasant farmer or even two villages of such farmers pay for machines and the fuel to run them? They have no surplus. They do not have access to the resources that make the machine age.

Someone has recently worked out the statement that 1.7 tons of steel per year is needed to keep one worker employed in the United States in this era of machinery. Today, October, 1947, we hear much clamor about the steel shortage with an output at the rate of 85 million tons a year and 60 million workers. Where can China get the necessary steel each year to keep that peasant going on the American plan? And where is the land on which to use the machines that steel might make? It is nonsense to talk about such things. The machine age has an almost insatiable need for precious and limited raw materials, and it needs wide lands to work upon. America is most fortunate in having this land and the bulk of the many raw materials just now, but for how long?

It is true that one set of power farm machinery—tractor (possibly two), fitting machines, seeding machines, harvesting ma-

chines, and truck employing not to exceed four men for a part of the year—could till and harvest all the land of two farm villages with sixty or seventy-five Chinese farmers and their three- or four-acre farms. There would be sixty men more or less needing jobs. F. H. King in his book *Farmers of Forty Centuries* points out that much Chinese production depends on telescoping the seasons to get two crops growing at once. In California a field as big as a hundred Chinese rice fields is sown with rice from an airplane. But in China rice is often grown in a wheat field. The wheat is cut in June, the rice is sown in April or May in a seedbed. After the wheat is cut the soil is prepared and the rice plants are set by hand, bunch by bunch, thousands to the acre.

Therefore it is clear that mechanization in China *à la* Dakota would reduce the harvest in that country, and starvation would follow quickly unless there were vast food imports.

Get more land?

There is less unused good land with good dependable climate in the world than many persons think. Indeed one of the most conspicuous aspects of this age is that lands are melting away by erosion. Following the lead of the West, many countries are cutting timber faster than it grows, pumping water out of the earth faster than it runs in, exhausting the soil of new frontiers, letting it wash away, digging the limited supplies of precious minerals as though we had but one objective—to make an end of it all.

The age of science and machinery is powerless before a bit of mathematics, the geometric ratio, which goes quickly to the end of the earth and sets out thence toward infinity. Mr. Bertram has pointed out that in quality and calories India needs 50 per cent more food than she now has. Give her that, says he, and in thirty years there will be 750 million people in India instead of 400 million. If well fed the people of India would then need 2.7 times their present food supply. And what about the next thirty years, and the next, and the next? New crops, better crop plants—especially tree crops—better breeds of animals, much greater use of the sea, can increase our food supply; but these things depend upon careful scientific work, elaborate organization, much mate-

rial, generations of time. Can these possible new developments keep up with the geometric ratio?

Professor N. S. Shaler, of Harvard, put it thus: "The offspring of two rabbits, if they lived and grew up and increased at the normal rate that rabbits increase, would in a short time produce numbers so great that they would cover the entire surface of the earth and there would be enough more to go off into space in a column a mile square with the velocity of light."

Substitute "people of India," "people of China," or "people of Europe," for "rabbits" in the above paragraph, and Shaler's statement is still true—if you grant a few centuries.

CROWDING AND WAR

The papers of colleagues Bertram, Thompson, and Taeuber have made a convincing case for the existence of crowding and its almost certain continuance in India and the Far East—crowding to the point of overpopulation with the result of malnutrition and famine in periods of disturbance of the food supply, especially droughts and floods. The record of Indian famines is much more than a thousand years old, and that of China is equally old—see Mallory, *China, Land of Famine*, with its record of hundreds of famines recurring almost as regularly as the seasons.

The geographic scene in East Asia and South Asia is set for famine. From western India to Manchuria there is a rainy coast and desert interior. How far inland do the rains go? The distance fluctuates. In a period of good years the crops are good and the population increases in the farm villages. Years of drought come. The crops fail, and there is a famine belt around the landward edge of the whole populous mass of India and China. The villagers starve, sometimes by millions. It has been so for millennia. Will it be so in the near future?

Crop failure becomes infinitely more deadly with these people than crop failure is in the United States. They eat most of their crops themselves. They have no margin, no surplus. We can rob the animals a little, not much, and we have enough to get by—a

feast indeed it would be to Far Eastern millions. We have the means of transport to carry surplus produce from place to place, and a crop failure that would kill millions in the interior of China is for us a mere tightening of our belts a little—a very little; but we do not have such crop failures often and we have the grain to feed ourselves and also our millions of cattle and hogs in addition to the poultry and the dairy cows. (See Dr. Thompson's chapter, pages 325-337.)

Because China is so crowded and has so little possibility of famine relief, infanticide is common and is not much noticed. In her book, *The Good Earth*, Pearl Buck gives a circumstantial case. One of the standard questions I asked American missionaries when traveling in China was, "Have you personally known of a Chinese practicing infanticide?" Almost invariably the answer was, "Yes."

An Englishwoman, making this answer and expecting me to explode with Puritanic virtue, hastened to say: "Now wait—don't blame them too much! What would you do if you and your wife already had a child and you all went to bed hungry every night month in and month out, and another child was coming, and there was no food for it? What would you do?"

Dr. Thompson concludes with the idea that these peoples, in generations to come, with their lands saturated with people, will look across the waters to the relatively empty lands of Western civilization and proceed by war to try to take those lands. Unorganized hunger certainly produces famine, and who will controvert Dr. Thompson's statement that organized hunger leads to war?

The Japanese have given us a convincing example with their long planned enterprise of land grabbing and the production of cannon fodder to execute the plan. And who does not recall Hitler's cry for *Lebensraum*, as he proposed to capture the rich lands of the Ukraine, praised in his book *Mein Kampf* as the promised land for the *Herrenvolk*? Unfortunately we need not cross an ocean in either direction to find what should be a rather convincing example of difference in population density as a con-

tributing factor to war. Did not our ancestors, the European settlers of America, take the Indians' land, tribe by tribe, with broken promise and more broken promises, with barbarity after barbarity? And then, when a tribe resisted a little, did they not call the Indian "treacherous savage" and other harsh names?

In view of these two well documented examples of human nature acting in the mass, Dr. Thompson's prediction of war by the crowded against the uncrowded is unpleasant to contemplate, and recent scientific advance has sharpened immeasurably the pain of contemplating it.

I quote from the *Science News Letter*, of August 30, 1947:

"Germ Warfare Advances More Potent Than A-Bomb

"Advances in biological warfare have made the atomic bomb all but obsolete.

"This is the opinion expressed by Dr. Brock Chisholm, executive secretary of the Interim Commission of the World Health Organization. Questioned at the Summer School of the World Federation of the United Nations Associations in Geneva, Dr. Chisholm remarked:

"'. . . The tiniest country now has the same war potential as the largest. All that is needed is an expert biologist with a laboratory and a small group of technicians. Methods of survival of ten years ago are outdated. Efficiency in killing has outreached all types of defensive weapons. The old concept of new weapons producing counter weapons is no longer valid and there is no foreseeable way of coping with biological warfare'."

On that basis any little nation may wipe out a bigger nation almost overnight.

There will of course be those who will take refuge behind hope and say that Dr. Chisholm may be wrong about lack of possible defense. Of course he may be wrong, but I certainly do not wish to trust my neck to such a shadowy hope.

Under further consideration of Dr. Thompson's almost irrefutable prediction of war, the Chinese appear as a great potential

menace. As he points out in his chapter, the Chinese are at present an unorganized, unscientific, medieval chaos, almost devoid of transportation, dying of famine and disease almost as before the beginning of the scientific epoch. Give them order and a moderate application of science such as the Japanese have had, and China will have several hundred million people who are probably second to none in personal capacity and may easily be the physiologically toughest and perhaps potentially the most intelligent people on earth. And of course they will be land-hungry to an extreme degree if their birth rate continues. In connection with birth rate, the Chinese religion of ancestor worship—if it may be called a religion—becomes a world menace because of the need to become an ancestor. Hence, early marriage, that a young man may have children to guarantee his ancestorship.

SHALL WE SIT STILL IN THE PROSPECT OF THIS IMPENDING AVALANCHE OF ASIATIC BIRTHS?

There is, or was, a prairie chicken in the West of the United States called the Fool Hen. She would sit on the limb of a tree and let you shoot at her, and shoot at her, and shoot at her, until at last you hit her. Why should we emulate this stupid bird by copying her ways?

The population facts above presented seem to make it reasonably clear that if there ever was a need for a crusade for self-preservation, that need has presented itself. That need is for a campaign of birth control among the peoples of Asia and other countries also. I do not venture to say how it can be accomplished. But is there any problem more pressing for the ultimate survival of Western civilization, perhaps for the survival of the population of whole nations, perhaps even of entire continents?

The Japanese have shown us what governments can do with population numbers when they set out to affect them. *The Nation*, in its issue of April 27, 1921, made the following editorial comment:

“Japan, with its usual habit of keen-eyed observation, has ap-

parently learned something from the recent war, and is convinced that overpopulation is the root of most international evils. The Japanese family now averages eight members and the population of the country is increasing at the rate of 700,000 a year. In view of these facts and of the exceedingly limited area of Japan, the Government feels strongly that only by a speedy and nation-wide establishment of the policy of birth control can a war of aggression be avoided in the next generation. As a preliminary step toward this end, Dr. Kato, head of the Department of Medical Affairs under the Japanese Government, is studying the birth-control movement in the United States, Holland, England, and Germany. Here in New York, Mrs. Margaret Sanger has received visits from twenty-five representatives of various departments of the Government to study the question. Dr. Kato reports that the Japanese Parliament is now convinced of the wisdom of national birth control and is concerned only with the methods of teaching it to the people. Sooner or later the rest of the world will have the intelligence to follow suit. At present the United States with laws defining discussion of this problem as 'obscene' brings up the rear of the procession."

It is a well established fact that when the military clique got possession of the Japanese government, they set out to have a hundred million people in Japan, so that Japan might have the man power to overrun and dominate eastern Asia. Premiums were placed on early marriage and offspring, and the population increased rapidly.

In the period when Japan had closed its doors to the world and had drawn within its shell like a turtle, the population is reported to have remained static for generations. Heroic measures were taken to attain this end. My colleague Dr. John Orchard reports having seen in Japan a monument erected to the memory of 9,000 fetuses—a product of deliberate and perhaps compulsory abortion. Since that rough day there have been great advances in the techniques of birth control. Can the West teach Asia to check the human avalanche before it starts?

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